INSIDE THIS WEEK: TECHNOLOGY QUARTERLY

The Economist

DECEMBER 6TH–12TH 2008

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The king's role in Thailand's chaos

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Where have all your savings gone?

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Politics this week

Dec 4th 2008
From The Economist print edition

A terrorist attack on **Mumbai**, India's commercial capital, ended after days of bloodshed. Some 190 people were killed. India's home minister accepted responsibility, resigned and was replaced by the finance minister. Manmohan Singh, the prime minister, took over the finance portfolio himself.

EPA

India lodged a formal protest with **Pakistan** over the attacks, alleging they were carried out by "elements from Pakistan". It was reported that the one surviving terrorist claimed to be a member of Lashkar-e-Taiba, a banned Pakistan-based group, which has denied involvement. India demanded that strong action be taken against terrorist groups in Pakistan and that the government hand over 20 alleged terrorists wanted in India. See article

Thailand's constitutional court decided that three parties in the ruling coalition were guilty of malpractice and must disband. The prime minister, Somchai Wongsawat, and other senior politicians were banned from politics. But supporters of Thaksin Shinawatra, a former prime minister deposed in a coup in 2006, still have a parliamentary majority and will try to continue governing in renamed parties. See article

After the court ruling anti-government royalist protesters called off their sit-in at **Bangkok's two main airports**. They had succeeded in closing the airports for around a week, delaying hundreds of thousands of holidaymakers and inflicting grave damage on Thailand's tourist industry.

Not nyet, just not yet

NATO foreign ministers put off any idea of early membership for **Georgia** and **Ukraine**. But to avoid seeming to give Russia a veto over NATO expansion, they reaffirmed their April decision that the two countries should join eventually.

The centrist party backed by **Romania's** president, Traian Basescu, emerged narrowly ahead of the Social Democrats in a general election. Its first option will be to re-create a ruling coalition with the centre-right liberals, but other alliances may prove necessary to form a government.

Germany's Christian Democrats overwhelmingly re-elected Angela Merkel as party leader. Ms Merkel has been criticised both in Germany and abroad for not doing enough to support a faltering economy. See article

A grand-coalition government of the mainstream left and right took office in **Austria**. The coalition excludes the two far-right parties that made big gains in September's election.

Venice suffered its worst flooding in 22 years. The Italian city now sees many more high-water floods than before. A controversial project to hold back the water is delayed. See article

AFP

Deal or no deal

Zimbabwe's two main rival parties agreed to a constitutional amendment that would provide for the opposition leader, Morgan Tsvangirai, to become prime minister, with Robert Mugabe remaining president. But other unresolved issues still prevent a unity government from emerging. Meanwhile cholera swept the country. The government declared a national emergency and appealed for international help. See article

Three days of sectarian violence in the **Nigerian** city of Jos left at least 300 dead and many houses, mosques and churches burned and looted. The killings were sparked by protests against the victory of the ruling People's Democratic Party in local elections. See article

Pirates continued to attack vessels off the coast of **Somalia**. An American cruise ship, the *Nautica*, carrying more than 1,000 passengers and crew, was targeted; it outran two small boats that fired at it but failed to board it.

Two of **South Africa's** Nobel peace prize laureates—F.W. de Klerk, a former president, and Desmond Tutu, a retired archbishop—called for an independent inquiry into a deal in 1999 between the government and foreign defence companies.

Majority opinion

Barely seven weeks after winning an election, Stephen Harper's Conservative minority government was fighting for its political life after **Canada's** three opposition parties formed an alliance to oust the government and install a centre-left coalition. Mr Harper was expected to ask the governor-general either to suspend Parliament or to call a fresh election. See article

After regional elections in which the opposition made gains, **Venezuela's** president, Hugo Chávez, ordered his party to move quickly to secure a change in the constitution to abolish term limits, a measure that was defeated in a referendum a year ago. Meanwhile, prosecutors said they would charge Manuel Rosales, a leading opposition politician, with corruption. He said the charge was politically inspired.

Brazil's government pledged to cut the amount of illegal deforestation in the **Amazon** over the next decade to 5,000 sq km (1,930 square miles) a year, or less than half the current rate. This followed the release of data showing that 12,000 sq km were cut down in the 12 months to July, an increase of almost 4% on the previous year but down from a record 27,000 sq km in 2003-04.

Daniel Dantas, a controversial **Brazilian** financier, was sentenced to ten years for bribing a police officer. See article

Diplomatic relations

Barack Obama named his **foreign-policy and national security** team. As expected, Hillary Clinton was nominated as secretary of state, Robert Gates was asked to stay on to run the Pentagon, and James Jones was named as national-security adviser. Janet Napolitano, the governor of Arizona, who declared a "state of emergency" along the state's border with Mexico in 2005, was proposed as homeland-security chief.

Mr Obama chose Eric Holder to be his **attorney-general**; he becomes the first black man to hold the position. As deputy attorney-general under Bill Clinton Mr Holder was embroiled in the controversial pardon of Marc Rich, a fugitive financier and fund-raiser.

The Democrats were denied a 60-seat filibuster-proof majority in the new **Senate** when a Republican won Georgia's run-off election. See article

Arnold Schwarzenegger declared a fiscal emergency in **California**. The state could run out of cash as early as February. With the parties arguing over what to do, the governor compared the situation to debating over "an accident victim on the side of the road that is bleeding to death".

Business this week

Dec 4th 2008
From The Economist print edition

The National Bureau of Economic Research, arbiter of American business cycles, determined that America's economy has been in **recession** since December 2007. The NBER defines a recession as a "significant decline in economic activity", using several indicators. By the NBER's calculation the current recession is already longer than those of 2001 and 1990-91. See article

The slump in America's **services sector** deepened in November. The Institute for Supply Management's overall index as well as its indices for business activity, new orders and employment all dropped to their lowest level since they were first compiled in 1997.

A measure of American **mortgage and loan-refinancing applications** from the Mortgage Bankers Association surged by 112% for the week ending November 28th. Homeowners rushed to rejig their loans when mortgage rates fell sharply after the Federal Reserve unveiled a plan to buy mortgage-backed securities and debt.

The chairman's comments

The market for American Treasuries rallied, with the yields on ten-year bonds falling to their lowest level in decades. The rally intensified after **Ben Bernanke**, the Fed's chairman, hinted that the central bank might buy long-dated Treasury and mortgage bonds to stimulate demand. See article

Congress's auditing arm criticised the Treasury for its oversight of the **Troubled Asset Relief Programme**. The Government Accountability Office said the Treasury had not yet fully monitored banks' compliance with the requirements set out by the bail-out's legislation, such as ensuring that the public money banks tap is used for expanding credit facilities. The Treasury has yet to ask for Congress's approval to release the remaining $350 billion of TARP's $700 billion.

Spluttering to a halt

The **Bank of England** made another big cut in interest rates, by one percentage point, to 2%. The rate has never fallen below 2% since the bank was founded in 1694, though most economists expect it will soon break that barrier. The **European Central Bank** made its biggest-ever reduction to its rate, by 75 basis points, to 2.5%. See article

The bosses of America's **Big Three carmakers** returned to Washington to request emergency funding from Congress. General Motors, Ford and Chrysler are now asking for a combined $34 billion, up from $25 billion just two weeks ago. New-car sales in America fell below 800,000 in November for the first time in decades. But the carmakers were heartened by the United Auto Workers' announcement that it would make new concessions. See article

The pain from the slump in global sales was not confined to Detroit. **Toyota** said it was suspending production at three Japanese plants for a couple of days. India's **Tata Motors** set up a scheme to raise deposits from the public (which should help refinance its acquisitions of Jaguar and Land Rover). And **Aston Martin** took the "regrettable but necessary" step of cutting its workforce by a third.

Credit Suisse produced an update for the fourth quarter, saying that so far it had lost SFr3 billion ($2.6 billion). The Swiss bank will shed 5,300 jobs. **Nomura** laid off 1,000 employees in London. The Japanese bank is absorbing the costs of buying part of Lehman Brothers' business after it went to the wall.

Germany's **BayernLB** received a €30 billion ($39 billion) government rescue, €10 billion of which came in the form of a capital injection from the state of Bavaria, part-owner of the Munich bank.

Regional high-fliers

British Airways confirmed it was exploring a merger with Australia's **Qantas Airways**. BA owned up to a quarter of Qantas between 1993 and 2004. A deal would have to navigate Australia's rules restricting foreign ownership of airlines.

Ryanair made its second bid in two years for **Aer Lingus**, its smaller Irish rival. The latest bid of €748m ($945m) is half what it previously offered.

Electricité de France offered to pay $4.5 billion for half of **Constellation Energy's** nuclear-generation business in the United States. In September Constellation rejected a bid for all its operations from EDF, agreeing instead to be bought by a unit of Warren Buffett's Berkshire Hathaway.

Oil prices sank to nearly $45 a barrel, their lowest level for more than three-and-a-half years. OPEC delayed until mid-December a decision on reducing output. See article

The Spanish property company that bought HSBC's headquarters in London's **Canary Wharf** last year for £1.1 billion ($2.2 billion) offered to sell it back to the British bank for £838m. The tower was the first building in Britain to fetch more than £1 billion.

KAL's cartoon

Dec 4th 2008
From The Economist print edition

Illustration by KAL

Economist.com OPINION LEADERS

Savings

Where have all your savings gone?

Dec 4th 2008
From The Economist print edition

Investors may draw the wrong lesson from history

FOR American and European savers it has been a lost decade. After two booms and two busts, stockmarkets have earned them nothing, or less, in the past ten years. Low interest rates have made bonds and bank deposits unrewarding too. Were it not for the tax relief they receive, contributors to personal pension plans would have been better off keeping their money under their mattresses. It will be little consolation to Westerners that savers in Japan have known this empty feeling for far longer.

This year's figures are enough to put anybody off saving. American mutual-fund assets have declined by $2.4 trillion—a fifth of their value—since the start of 2008; in Britain, the drop is more than a quarter, or almost £130 billion ($195 billion). The value of global stockmarkets has shrunk by maybe $30 trillion, or roughly half. These figures put the losses on credit-related securities—where the financial crisis began—into the shade.

Nor has the bad news been confined to equities. This year the value of all manner of risky investments, from corporate bonds to commodities to hedge funds, has been clobbered. The belief that diversification into "alternative assets" could prevent investors losing money in bear markets has proved false. And of course housing, which many people counted on for their retirement nest-eggs, has lost value too (see article).

As a result, saving seems like pouring money into a black hole (see article). Any American who has diligently put $100 a month into a domestic equity mutual fund for the past ten years will find his pot worth less than he put into it; a European who did the same has lost a quarter of his money.

Save your cake and eat it

It may seem an odd time to worry about savings. This week the National Bureau of Economic Research declared that the world's largest economy, America, had been in recession since December last year. The economies of Japan and much of western Europe have been shrinking. A rapid, global, private-sector shift to thrift is exactly what the world economy does not need. That's why governments around the world have been passing hurried measures to try to encourage people to spend more of their incomes.

In some countries, they should. Asians (and Germans too—see article), have been squirrelling their

money away with excessive enthusiasm. But other countries' citizens have been putting too little aside for their old age. In America, the household savings ratio (the proportion of disposable income not used for consumption) has been below 2.5% since 1999; in Britain, it has been below 3% in each of the past two years. The Asians' parsimony made the Anglo-Saxons' profligacy possible. Through their increasingly sophisticated financial systems, the Americans and British were able to borrow from the thrifty Asians to finance their spending spree. And, because their house prices were rising so fast, they had the collateral and the confidence to do so.

In other words, Anglo-Saxons were able to save their cake and eat it. They did not have to sacrifice consumption in order to build up assets for the future, because lax monetary policies encouraged borrowing that pushed up the prices of housing and other assets, which gave them the illusion of having saved enough. But now this debt burden is being unwound, asset prices are collapsing and savings rates are rising because consumers are unwilling, or unable, to borrow.

Though this is bad news for the American and British economies in the short term, it ought to be good news in the long term. How good, though, depends as much on where people put their savings as on how much they put aside.

Careless caution

If savers treated financial assets as they do other goods, they would sell them when they are expensive and buy them when they are cheap. Actually, they do the opposite. They piled into the market in 1999-2000, at the peak, and are piling out of it now. They should, of course, have got out in 2000, when the global price-earnings ratio was 35; shares look relatively much more attractive now, since the ratio is down to ten. A recent analysis shows that, when American price-earnings ratios are low, returns on equities over the next decade average 8%; when they are high, returns average 3%.

But people's recent losses have made them cautious. They are putting their money into cash or money-market funds, rather than equities or corporate bonds. The returns they are getting on their savings look increasingly pitiful. Interest rates are falling sharply, with more central banks announcing cuts this week. Savers may initially be shielded from the full impact of those reductions, because commercial banks are competing for retail deposits. But rates in many big economies are heading for, or have already reached, 1-2%.

Caution is understandable, after the trauma of this year. Equity and corporate bond markets could yet fall further, especially as the news on the economy seems to get worse every week. But it is still perverse that investors were happy to buy shares nine years ago, when the ratio of share prices to profits was three times what it is today, and are now determined to keep their money in cash and bonds.

That approach will be hopelessly inadequate for those who want to build a decent pension, especially in defined-contribution, or money-purchase, schemes, where the employee bears all the investment risk. The average American scheme member contributes just 7.8% of salary to his pension scheme. His employer, on average, contributes only 4.4%. He has a pot worth only $68,000. A rule of thumb is that total contributions need to be around 20% of wages to match a traditional final-salary scheme.

Inadequate savings, badly invested, are a problem for individuals and the economy. Cautious savers are putting their money in banks; banks are reluctant to lend; companies therefore find it hard both to borrow money and to raise equity capital. This timidity hurts companies and, in the long term, savers. Implausible as it may sound, right now equities and corporate bonds are a better long-term bet than cash.

Economist.com OPINION LEADERS

Thailand's monarchy

The king and them

Dec 4th 2008
From The Economist print edition

The untold story of the palace's role behind the collapse of Thai democracy

THAILAND'S tourism business, its export industries and its reputation have been wrecked by recent events. Crowds of royalists have occupied the government's offices for months and then seized Bangkok's airports. The police refused to evict them. The army refused to help. This week the siege was ended after the courts disbanded three parties in the ruling coalition. But the parties plan to re-form under new names and continue governing, so fresh strife threatens. It is as if a thin veneer of modernity, applied during the boom of the 1980s and early 1990s, has peeled away. Until recently a beacon of Asian pluralism, Thailand is sliding into anarchy.

The conflict began three years ago as peaceful rallies against corruption and abuse of power in the government of Thaksin Shinawatra. The protesters, wearing royal-yellow shirts and accusing Mr Thaksin of being a closet republican, got their way when royalist generals removed him in the coup of 2006. But on democracy's restoration last year, Thais elected a coalition led by Mr Thaksin's allies. The yellow-shirts of the inaptly named People's Alliance for Democracy (PAD) revived their protests and adopted increasingly thuggish tactics, prompting Mr Thaksin's supporters to don red shirts and fight back.

Speak it not

Throughout this conflict, the great unmentionable, not just for the Thai press but also for most foreign reporters, has been the role of King Bhumibol, his family and their closest courtiers. The world's most ferociously enforced law against *lèse-majesté* (offending the crown) prevents even the mildest discussion of the palace's role in Thai public life. Such laws are mostly in disuse elsewhere, but Thailand's was harshened in the 1970s. Absurdly, anyone can bring a *lèse-majesté* suit. The police have to take seriously the most trivial complaints. All this makes the law a useful tool for politicians and others seeking a way to damage their foes. Often, the press is not allowed to explain the nature of any supposed offence against the crown, so Thais have no way to tell whether it really was so disrespectful.

The *lèse-majesté* law is an outrage in itself. It should not be enforced in any country with democratic pretensions. Worse is that the law hides from Thais some of the reasons for their chronic political woes. For what the king himself calls the "mess" Thailand is in stems in many ways from his own meddling in politics during his 62-year reign (see article). In part, the strife also reflects jockeying for power ahead of the succession. With the king celebrating his 81st birthday on December 5th, that event looms ever larger.

Much of the story of how the king's actions have hurt his country's politics is unfamiliar because Thais

have not been allowed to hear it. Some may find our criticisms upsetting, but we do not make them gratuitously. Thailand needs open debate if it is to prepare for the time when a less revered monarch ascends the throne. It cannot be good for a country to subscribe to a fairy-tale version of its own history in which the king never does wrong, stays above politics and only ever intervenes on the side of democracy. None of that is true.

The official version of Thai history dwells on episodes such as the events of 1992, when Bhumibol forced the resignation of a bloodstained dictator and set his country on course for democracy. But many less creditable royal interventions have gone underreported and are seldom discussed. In 1976, paranoid about the communist threat, the king appeared to condone the growth of the right-wing vigilante movement whose members later took part in the slaughter of unarmed student protesters. In the cold war America saw Bhumibol as a staunch ally and helped finance his image-making machine. This long-standing alliance and the fierce *lèse-majesté* law have led Western diplomats, academics and journalists to bite their tongues and refrain from criticism.

After the 2006 coup, the 15th in Bhumibol's reign, officials tried to tell foreigners that protocol obliged the king to accept the generals' seizure of power. Thais got the opposite message. The king quickly granted the coupmakers an audience, and newspapers splashed pictures of it, sending Thais the message that he approved of them. In truth the king has always been capable of showing his displeasure at coups when it suited him, by rallying troops or by dragging his feet in accepting their outcome. And he exerts power in other ways. Since 2006, when he told judges to take action on the political crisis, the courts seem to have interpreted his wishes by pushing through cases against Mr Thaksin and his allies—most recently with this week's banning of the parties in the government.

No fairy-tale future

In the imagination of Thai royalists their country is like Bhutan, whose charismatic new king is adored by a tiny population that prefers royal rule to democracy. In reality, with public anger at the queen's support for the thuggish PAD and the unsuitability of Bhumibol's heir simmering, Thailand risks the recent fate of Nepal, which has suffered a bitter civil war and whose meddling king is now a commoner in a republic. The PAD was nurtured by the palace and now threatens to engulf it. An enduring image of the past few days is that of PAD toughs shooting at government supporters while holding up the king's portrait. The monarchy is now, more clearly than ever, part of the problem. It sits at the apex of a horrendously hierarchical and unequal society. You do not have to be a republican to agree that this needs to be discussed.

As *The Economist* went to press, on the eve of the king's birthday, he was reported to be unwell, and unable to deliver his usual annual speech to the nation. So he had still not repudiated the yellow-shirts' claims to be acting in his name. His long silence has done great damage to the rule of law in Thailand. He could still help, by demanding, as no one else can, the abolition of the archaic *lèse-majesté* law and the language in the current charter that supports it, and so enable Thais to have a proper debate about their future. He made a half-hearted stab at this in 2005, saying he should not be above criticism. But nothing short of the law's complete repeal will do. Thailand's friends should tell it so.

Gadgets

Thinking inside the box

Dec 4th 2008
From The Economist print edition

There is more to portable electronic gadgets than just fancy hardware

Illustration by Claudio Munoz

ELECTRONIC gadgets have changed a great deal in the past few years. Most obviously, they have become smaller, sleeker, smarter and more versatile. Billions of people now carry around tiny devices that are more powerful than the desktop computers of a few years ago. But these gadgets have also changed in a less obvious way. Once they were lumps of hardware, brought to life by a layer of software; today, they might be more accurately described as services in a box.

It was ever thus with mobile phones, of course: the handset is useless without a network operator, and mobile phones are, in effect, the containers in which operators sell their services. But the handset and the network service have hitherto come from different companies. Operators do not manufacture their own phones, and handset-makers are not operators.

But now device-makers are increasingly providing the services that power their devices—or, to look at things the other way around, building devices that encapsulate services they wish to offer. One of the first to do so was Research in Motion (RIM), the maker of the BlackBerry e-mail device. As well as making BlackBerrys, RIM also handles the delivery, using its own behind-the-scenes infrastructure, of e-mails to millions of its devices around the world. Similarly, Apple's iPod started off as a piece of hardware in 2001, but it really took off in 2003 when Apple launched the iTunes Music Store, a service that makes it easy for iPod owners to download music, video and games to their devices, and which is now the leading online music retailer. Makers of satellite-navigation devices such as TomTom and Garmin are also moving from a focus solely on hardware to a greater emphasis on supplementary services—real-time traffic updates, information about the positions of speed cameras, revised versions of maps and so on.

Now the biggest gadget-maker of all, in volume terms at least, is extending its push into services, and is trying to do all these things at once. Nokia, the world's biggest handset-maker, sells nearly half a billion mobile phones a year, roughly two in every five. This week it added revamped mobile e-mail and navigation services to the music downloads it already offers on some of its handsets (see article). So convinced is Nokia of the importance of services that it reorganised itself last year into two divisions: one to build handsets, and the other to provide its growing suite of services, called Ovi.

At your service

There are several motivations for the gadget-makers' shift into services. First, margins on hardware are generally lower than margins on services. Second, saturated markets in many parts of the world mean

that hardware sales are slowing in some categories. Soon, everyone in western Europe who wants a satnav will have bought one; what will the manufacturers do then? Make money from subscriptions and updates, of course. At least, that's the plan. Finally, services provide a way to hold on to customers. If you have signed up for a service tied to a particular gadget-maker, the thinking goes, you are less likely to switch to a different manufacturer's device in future.

The world's most successful gadget-makers are those that have been quickest to recognise the importance of offering accompanying services. Makers of stand-alone music-players, such as Rio, have been unable to compete with Apple; and Motorola, once the top dog in mobile phones, let RIM, once an obscure Canadian start-up, grab the mobile e-mail market.

With elaborate branding and advertising campaigns, gadget-makers have long promoted the idea that they were selling something more than just a bundle of electronics in a snazzy case. Now, funnily enough, some of them really are.

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Dealing with Pakistan

After Mumbai

Dec 4th 2008
From The Economist print edition

Even though the terrorists probably came from Pakistan, India should continue to keep its cool

AP

PEOPLE in India are describing last week's terrorist attack on Mumbai as India's September 11th. In many ways, the comparison is apt. Although the death toll, at about 190, is a fraction of the number killed in America, this brutal attack on a business capital has traumatised an entire country.

But if the attack on Mumbai is like September 11th, India needs to learn from America's mistakes. The 19 al-Qaeda hijackers changed history seven years ago. Had they not felled the twin towers, America would not have invaded Afghanistan or Iraq. The easiest way for India to play into the hands of those who sent the ten terrorists to Mumbai would be for India to consider a military response against Pakistan.

It is probable that the terrorists did embark from Pakistan. The testimony of the surviving attacker, the fact that the band arrived by sea, and American intelligence all point that way (see article). A prime suspect is Lashkar-e-Taiba, one of several groups based in Pakistan that are officially banned but suspected of receiving quiet encouragement from parts of the Pakistani state to wage *jihad* in the disputed territory of Kashmir and, increasingly, in Afghanistan as well.

When terrorists attacked the seat of India's Parliament in December 2001, the two countries mobilised their armies and came close to war. This time India has shown admirable forbearance. There has been remonstrance but no sabre-rattling.

But forbearance alone cannot be a long-term answer to the problem of Pakistan. The Mumbai plot is only the latest indication that this huge, nuclear-armed country is not under the full control of its newly elected government. When President Asif Ali Zardari said after the carnage in Mumbai that he would take the strictest action against any guilty individual or group "in my part of the country", it was perhaps a slip of the tongue. But the implication is true: large tracts of Pakistan, notably the tribal areas abutting Afghanistan, are under the control of local tribesmen, the Taliban, al-Qaeda or a mixture of all three.

The fighting in the tribal areas and the killing last year of Benazir Bhutto misleads outsiders into calling Pakistan a failed state. If that were truly so, America's policy of bombing al-Qaeda targets inside Pakistan might make some sense—as might Indian military intervention in Pakistan. But it is not that simple. Most of Pakistan is quite firmly under the state's control. However, just as the state does not control all the country, nor does Mr Zardari control all the state. The ultimate arbiters of foreign and security policy in Pakistan have long been the army and intelligence services.

The army's top brass seem in tune with their president in seeing Islamist terrorists as the most dangerous enemy facing Pakistan. But for some soldiers and spooks, the manipulation of the jihadists on

Pakistan's soil remains a rational instrument of foreign policy. Although it is America's ally, Pakistan maintains links with the predominantly ethnic-Pushtun Taliban in Afghanistan, as a hedge against the day America leaves and a way to thwart a perceived Indian plan of strategic encirclement. The insurgency in Kashmir, likewise, is seen as a means of bogging down the old enemy, India. For those in Pakistan who think this way, the warming of relations between America and India—especially the rewriting of global proliferation rules to forgive India for building a bomb—looks like a menacing change that needs to be countered.

The vengeance trap

To understand these motives is not to condone them. India has every right to demand that Pakistan stops letting its territory be used as a terrorist haven and to track down those responsible. But these demands have to be accompanied by a balanced strategy that bolsters Mr Zardari and weakens the argument of his generals, not (as in the case of those American bombing raids) the other way round. It should include inducements, such as Indian flexibility over Kashmir, as well as pressure. Pakistan's army would presumably like nothing better than an excuse to give up its demoralising battle against fellow Muslims in the tribal areas and redeploy against the traditional Hindu enemy in the east. India must not fall into that trap.

Economist.com OPINION LEADERS

Muslims in European cities

A case for vigilance, not despair

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From The Economist print edition

Europe's cities are finding ways of managing religious difference—but national governments must set the rules

IN THEIR latest assessment of how the world will change between now and 2025, America's intelligence agencies had only one big point to make about Europe: the concentration of Muslims in some cities could lead to "tense and unstable situations", especially if economies lagged. It was also likely that European adherents of Islam would "value separation in areas with Muslim-specific cultural and religious practices".

As our report this week on Islam in urban politics suggests (see article), this picture of angry, self-isolated communities—living in slums where violence and terrorism fester—may well be too bleak. The historic cities of Europe, which are far older than most nation states, retain a remarkable ability to absorb newcomers and accommodate many different kinds of social reality. The practical problems posed by co-existence between faiths and cultures—from swimming-pool regulations to the slaughter of animals to headgear in municipal premises—can often be handled in practical ways through a healthy process of local bargaining. Issues like land use, burial, hygiene, food safety and noise simply have to be managed locally for cities to function at all. From the school canteens of Lyon to the cemeteries of Leicester, there is a perpetual and often successful search for new ways of managing difference.

That's the goodish news. But in matters of co-existence between religions and cultures, not all politics is local. At a minimum, there have to be national arrangements—in the form of laws, ombudsmen and constitutional safeguards—to make sure that local bargaining doesn't produce outrageous results. The more pressure there is at local level to accommodate particular cultural practices, the greater the need for countervailing pressure, and perpetual vigilance, on the part of national (and sometimes supranational) bodies. The European Court of Human Rights has a role to play in curbing the sort of religious nativism that crimps individual liberties; it recently vindicated a French Muslim journalist who had criticised the rector of Lyon's main mosque. But absent a federal Europe with an American-style constitution, most of the vigilance will have to be exercised by national governments.

The spectre of terrorism

Vigilance against what? For a start, against threats to national security. In the task of ensuring that mosques (and all other religious institutions) refrain from inciting violence or fostering terror, local authorities do have some role to play—but in general that is a job that needs to be co-ordinated nationally, and often internationally. Recently, moderate figures in British Islam have complained about the use of municipal premises in several parts of greater London by extremist Muslims. It is a good sign that these protests are coming from Muslim citizens; but government watchdogs as well as ordinary folk should look out for collusion between town halls and hotheads.

Almost as important, there need to be nationally enforced safeguards to stop urban “no-go” areas—places that are so much dominated by a single faith that they are virtually off-limits to people of other backgrounds—from developing. When Michael Nazir-Ali, a Pakistani-born Anglican bishop, said some urban areas in Britain were becoming out of bounds for non-Muslims, he was denounced for alarmism. Perhaps it was unwise of him to blame just one religion for trying to mark out urban territory; in recent memory, one British city (Belfast) had no-go areas for people of the “wrong” Christian sect. But the risk he described is a real one, and it cannot be averted by local politics alone.

Moreover, urban areas dominated by one religious group in a bullying way are not merely an affront to members of other groups who might want to walk, shop or trade in that place. They are also a risk to individual members of the locally dominant group who want to exercise their rights: for example, young women who choose not to wear headscarves or enter arranged marriages. Upholding the rights of those individuals is a vital task for national governments, legislators and courts. Many European states have large bureaucracies, reinforced by a network of NGOs, whose job is to protect immigrants from oppression by the majority “white” population. These institutions should be just as concerned when the infringers of human rights are locally dominant religious establishments.

Historically, multi-ethnic societies have worked in many different ways. In some, each individual’s freedom was limited by the taboos and hierarchies of his or her community. But at best, cities have been places of liberation where people of all faiths and cultures can interact and make their own choices. Today, Europe’s Islamising towns lie somewhere between those two poles—and every politician in Europe, whether national or local, should think about how to discourage restriction and encourage freedom.

Economist.com OPINION LEADERS

British politics

The tragedy of the Commons

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From The Economist print edition

The arrest of an MP underlines the importance of parliamentary privilege

Getty Images

WHEN MPs are summoned to hear the queen open Parliament each year, the door of the House of Commons is at first slammed shut in the face of her representative. Coming just days after the extraordinary arrest of an MP, this year's ritual assertion of parliamentary independence looked painfully relevant, and a touch forlorn.

On November 27th Damian Green, the Conservative immigration spokesman, was arrested, held for nine hours and questioned by police. His home and offices—including the one in Parliament—were raided by some 20 officers; computers and mobile phone were carted off. The coppers had been brought in by the Home Office to investigate a series of leaks from within that Mr Green had helped to make public. They think Mr Green may be guilty of "aiding and abetting, counselling or procuring misconduct in a public office". Others say that he was just doing his job: holding government to account, however embarrassing that government may have found it.

The outrage which the episode has provoked is profound. Many of the legal details in this murky tale (in which more may yet emerge) remain unclear. But the overall effect of the ham-fisted police intervention is to cast a general pall over enthusiasm for digging out useful information and putting it in the public domain. This, with political power as centralised as it is in Britain, is deeply worrying—the more so as the current Labour government continually seeks to expand the authority of the state over the citizen.

Four sets of relationships have been laid open to awkward inspection: between government ministers and the police; between ministers and top civil servants; between MPs and government moles; and between officials of the House of Commons and its members. As this story details, the investigation was instigated by Home Office civil servants after a blush-making leak about the department's failure to control illegal immigrants. On November 19th the civil-service mole, once an unsuccessful Tory candidate for local office, was arrested. Jacqui Smith, the home secretary, says she had no prior knowledge that an opposition MP was involved, still less that the police planned to burst into his home and arrest him. Her senior civil servant was the man in the know, it seems, and the police were allowed to proceed as they saw fit.

Whether it was right for the head of the department that launched the inquiry to take so little interest in it thereafter is open to question; Ms Smith says it would have been improper of her to interfere with the "operational independence" of the police. Whether it was right for civil servants to authorise such tactics without consulting their political masters is also debatable. And it is possible that Mr Green inadvertently encouraged Christopher Galley, the mole, to leak information by letting him dream of sitting one day at a Tory high table.

Gatekeepers crashed

But one thing is clear. If, as it seems, the police failed to point out to the House of Commons serjeant at arms, when they applied for permission to search a parliamentary office, that she had the right to refuse consent and demand a warrant, they broke the law. That Jill Pay and the speaker of the house, Michael Martin, were remiss not to think of this themselves goes without saying. On December 3rd, holding his statement with shaking hands, Mr Martin assured the House of Commons that it would not happen again. But that is not enough. Change is overdue; and there is nothing like a scandal to incite it.

Of course MPs must not be above the law. At times, though, they must sail close to it in seeking to challenge the executive, whether king or Home Office. So they are granted certain privileges, hallowed by long observance but ill-defined. Uncertainty has contributed to the current problem.

It is time to draw some firm boundaries, in such a way that MPs are cut the slack they need to do their job. Police powers over them must be strictly defined; legal ambiguity about when they can use information from a mole and when they are held to be aiding misconduct must be removed. The bias should be towards greater openness and freedom. A decade ago a review of parliamentary privileges urged that they be clarified. That must now happen, and quickly.

Economist.com OPINION LETTERS

On international courts, Nicaragua, Lloyds TSB and HBOS, prostitution, blame, behaviour, Brazil, Miriam Makeba, Canada, MBAs

Dec 4th 2008
From The Economist print edition

How to choose a judge

SIR – You are correct in pointing out that the authority of international courts and tribunals depends ultimately on the quality of their judges ("Wanted: better judgment, fewer crowd-pleasers and lickspittles", November 22nd). But your dismissive reference to "vague qualifications" did not recognise the efforts we made, when drafting the statute of the International Criminal Court, to mitigate the worst effects of the fact that the only available process for choosing the ICC's judges is election by the states that have signed up to the court. Specifically, the statute contains considerable detail about the practical and professional experience that candidates must have, and obliges a government forwarding a nomination at least to make clear how the candidate meets those requirements.

The real weight rests, however, less on the electoral process and more on what sort of candidates are put forward, in the first place, and then, in the second place, how governments set about exercising their electoral choice between them. Those are the two crucial points on which pressure should be brought to bear.

As to the first, some credit is due to the British government for choosing nominees for international judicial office subject to advertisement, application, peer review and a process of competitive interview; this practice is unique among countries. As to the second, the best idea is to introduce some form of collective scrutiny of the qualifications of the candidate field, of the kind begun years ago by the committee of ministers' deputies in Strasbourg. The vestige of a legal basis for such a process is in the ICC's statute. *The Economist* should press for its implementation.

Sir Franklin Berman, QC
London

SIR – One of the reasons why the Council of Europe's Parliamentary Assembly elects the judges of the European Court of Human Rights is precisely so that it can prevent the type of "cronyism" you touched on by excluding candidates who don't meet the highest standards. All candidates are interviewed by a parliamentary panel composed mainly of legal experts. Each CV is scrutinised, language and other skills are put to the test and there are background checks into the candidate's experience and competence. The panel then makes recommendations to the whole assembly, which almost always follows its advice.

This weeds out any "political" nominees and gives democratic legitimacy to the court. Because the parliamentarians have the power to reject lists of nominees, which they have done on several occasions, they can insist that governments come up with credible candidates using fair and transparent procedures. The assembly has also used this power to require more female candidates and today over a third of the judges on the court are women. Far from producing "crowd-pleasers and lickspittles", this finely tuned process has produced a resolutely independent court with a 49-year record of highly respected jurisprudence.

Marie-Louise Bemelmans-Videc
Chairperson of the subcommittee on the election of judges to the European Court of Human Rights
Parliamentary Assembly of the Council of Europe
Strasbourg

SIR – Somalia's record on civil and political liberties may well be among "the worst of the worst", but the Somali judge you mentioned who has been nominated to the International Court of Justice is eminently qualified. You did not name Abdulqawi Yusuf, but, among other things, he is currently a legal adviser to UNESCO, has been a professor of international law at the University of Geneva and is the founder and editor of the *African Yearbook of International Law*.

Ana Vrdoljak
Senior lecturer in law
University of Western Australia
Perth, Australia

Managua memories

SIR – Your article on Nicaragua gave the impression that the United States' immediate response to the overthrow of the Somoza regime in 1979 was to organise the Contra guerrillas ("How to steal an election", November 15th). In fact, we initially tried to build bridges to the new Sandinista government. I was USAID's mission director in Managua. During the first 18 months following the overthrow USAID was the principal source of financial, food and technical assistance.

In the autumn of 1980, the United States presented the Sandinista government with evidence that the Sandinistas were assisting the FMLN revolutionaries in El Salvador, and gave warning that continued support threatened our efforts to build a constructive relationship. Jimmy Carter considered cutting off aid, but in the wake of Ronald Reagan's victory prudently chose to leave the decision to the new president. To its credit, the Reagan administration tried to avoid the looming confrontation by offering the Sandinistas a deal whereby they would have a free hand with respect to their internal policies in return for discontinuing their support of the FMLN. The Sandinistas rejected the deal, setting the stage for American assistance to the Contras.

Lawrence Harrison
Director
Cultural Change Institute
Tufts University
Medford, Massachusetts

Merging banks

SIR – I want to respond in clearest terms to your leader on the acquisition of HBOS by Lloyds TSB ("Call it off", November 8th). You stated that HBOS could exist as a stand-alone business with the support of government capital. However, it is clear that the government's capital-injection programme by itself would not fix the problems of the HBOS model, which had an over reliance on wholesale funding and moved into riskier businesses.

You also contended that the combination of Lloyds TSB and HBOS would reduce competition significantly. The British financial-services market is very competitive with every business vigorously pursuing every point of market share. Not only do we have competition on the high street from banks such as Abbey, NatWest, HSBC, Barclays, Woolwich, Nationwide, and so on, retailers such as Tesco, Sainsbury's and Marks & Spencer are also expanding into this area.

The reality is that the acquisition of HBOS is a compelling transaction. It helps to support the stability of the British financial system. It creates a strong competitor in the market that can provide much-needed liquidity to the small business and retail sectors of our economy during these challenging times. It also offers significant long-term value to shareholders.

Eric Daniels
Chief executive
Lloyds TSB Group
London

A red light

SIR – Regarding your leader on a proposed law in Britain that will "half-ban" prostitution ("An amber light", November 22nd), I too do not believe for a moment that prostitution can be eliminated by legislation. But limiting a ban to those paying for sex with a woman "controlled for another's gain", such as a pimp, will doom this new law to failure. Instead of the relatively simple prosecution of a "punter", police will be faced with a full scale and expensive vice-inquiry to establish "control" and "gain". Good

intentions marred by ineffective legislation are the hallmark of this government.

Martin Jauch
Former chief superintendent, clubs and vice unit
Metropolitan Police
Winchcombe, Gloucestershire

SIR – Given that some countries have already nationalised the world's second-oldest profession (banking), why not nationalise the oldest? The industry would become fully regulated; the prostitutes could then work decent hours under close supervision, have regular holidays and be free from abuse by pimps.

Governments could use the huge revenues that prostitution generates to bail out even more banks (the vice industry in Australia alone is growing at a rate of 8% a year: the country spent $11.3 billion on prostitution and strippers in 2007). As well as being the oldest profession perhaps prostitution is also the most honest, given the recent shenanigans by all those involved in the credit crunch. We are all civil servants now.

Mike Gallagher
London

Who's to blame?

SIR – The rise of the culture of blame in politics that Bagehot describes (November 22nd) can be explained by modern societies putting too much faith in "leadership". Representative government has developed into a cult of leadership, diluting the role of individual responsibility. Career politicians now mostly claim their job is not to "represent", but to "lead". The media are forever asking "What are our leaders doing?" to remedy this or that situation. Meetings of "world leaders" are expected to solve problems.

Elevating politicians, who are supposedly representatives of the people, to the status of leaders keeps the people in a state of permanent infancy. Instead of citizens being free to make their own choices and mistakes through the processes of direct democracy, power and responsibility are monopolised by the political parents.

As any experienced parent will tell you, the best way to stop children laying blame on others is to make them responsible for their own decisions, even if that means letting them make their own mistakes. It is the process of growing up and becoming adult. Give the kids a chance. Let them make their own choices.

Stephen Morris
Coorparoo, Australia

SIR – I disagree that Britain has a "political culture dominated and warped by blame". I would offer another view: there is an insufficient culture of accountability. If, for instance, the Home Office continually loses the records of millions of people, or the Football Association selects England managers who do not perform, or a local social-services office persists with a poor child-care strategy, then the chief civil servant of the Home Office, the head of the FA and the boss of social services should not even be allowed to resign, but should be dismissed. This way people in the job would be made aware that "being in charge" means not only having authority and responsibility but also ultimate accountability.

Michael Sida
Norwich

SIR – I enjoy reading Bagehot, but he must have worked hard on his erudition in his November 15th column: "rebarbative", which has eluded my version of the "Concise Oxford English Dictionary", as well as "jejune" and "ineluctable", which do not resound with great frequency in our everyday conversation. A little more pellucidity please, Bagehot.

Glenn Mainland
Raven, Canada

Good behaviour

SIR – It is always interesting to see scientific confirmation of what most of us already took for granted, this time the fact that social behaviour tends to conform to its surroundings ("Can the can", November 22nd). It is notable that anti-social behaviour fell by roughly half when the environment was ordered (as opposed to disordered). But the relative ranking of people's behaviour also tells us something: 82% took a naughty short cut in violation of trespassing signs, dropping to 27% when the surroundings were ordered; 69% littered a graffitied alley, 33% did so in an alley with clean walls, and so on.

Most encouraging of all, only 27% of us are tempted to steal, falling to 13% when order surrounds us. Yes, we have some way to go to reach the goal of zero, but it would seem we've got our priorities right in the first place.

Colin Pickering
Bristol

Town and country

SIR – Your favourable description of a small village in a remote corner of Brazil ("The other Brazil", November 22nd) was contrary to the thrust of your general advocacy of urbanisation, particularly the sentiments expressed in a recent article on the astounding growth of cities in the developing world ("Lump together and like it", November 8th). The latter supported the notion that big cities bring "vast economic advantages" to their inhabitants, including higher wages and better access to services not available to isolated rural regions, suggesting that urban dwellers enjoy a better quality of life.

How then to reconcile this perspective with your view from deep inside Brazil's Amazon forest? I was surprised to find you describe a group of happy villagers living in a traditional, "self-sufficient", eco-friendly community, who use a barter system to trade. Moreover, you attributed the village's idyllic nature to its small size. Images of children playing blissfully by the river were contrasted with suicide and a knife fight in the nearby settlement of Vendaval.

Perhaps there are some advantages to not being lumped together with 1,500 other souls (the population of Vendaval), let alone 15m.

Nate Bowen
Redwood City, California

The voice of Miriam Makeba

SIR – Where did you get the phonetic fantasy about Miriam Makeba's ability to "sing while making the epiglottal clicks of the Xhosa language" (Obituary, November 15th)? It would be physiologically impossible for the epiglottis to be involved in producing the click consonants of Xhosa. As every phonetician knows, they are produced with the centre and front of the tongue. The throat (including the glottis and epiglottis) is made irrelevant by a momentary closure of the back of the tongue against the soft palate, which seals it off from the airflow. And incidentally, the South African singer didn't "sing while making" these sounds; she just sang words containing them. They are merely consonants that occur in certain words.

Geoffrey Pullum
Professor of general linguistics
University of Edinburgh
Edinburgh

A patriot

SIR – Andrew Work posited that Canada is more politically colour-blind than the United States because its governor-general is a black woman (Letters, November 22nd). Canada's governor-general is not

elected, but appointed by the queen on the “advice” of the Canadian prime minister. It seems strange to mention her at all since she doesn’t exercise any real power. In any case, with barely half the population of Britain and slightly less than California, is Canada even relevant?

Sam Adams
Munich

Tarnished reputations

SIR – I noted from your article on innovation (“A gathering storm”, November 22nd) that a school of thought exists that thinks the United States does not need to produce world-beating graduates in science and technology because it can rely on its superior MBA programmes and business practices. Are these the same MBA programmes and business practices behind America’s recent financial performance?

Mike Lloyd
Melbourne

Thailand's king and its crisis

A right royal mess

Dec 4th 2008 | BANGKOK
From The Economist print edition

Thailand’s interminable political conflict has much to do with the taboo subject of its monarchy. That is why the taboo must be broken

EPA

EVEN the most revered of kings, worshipped by his people as a demigod, is not immortal. Thais were reminded of this last month when six days of ornate cremation ceremonies, with gilded carriages and armies of extras in traditional costumes, were held for Princess Galyani, the elder sister of their beloved King Bhumibol Adulyadej (pictured above). There was talk in Bangkok of the princess’s funeral being a “dress rehearsal” for the end of Bhumibol’s reign, 62 years long so far. Making one of few public appearances this year, shortly before his 81st birthday on December 5th, the king did indeed look his age.

The funeral only briefly calmed a political conflict that has raged for three years between supporters of Thaksin Shinawatra, the prime minister ousted by royalist generals in the 2006 coup, and an opposition movement backed by much of Bangkok’s traditional elite, apparently including Queen Sirikit. But the day after the ceremonies ended a grenade exploded among anti-Thaksin protesters, killing one. The anti-government protesters, the People’s Alliance for Democracy (PAD), who had been occupying Government House since August, then seized Bangkok’s main airports, causing chaos. The siege was lifted only eight days later, after a court dissolved the main parties in the pro-Thaksin coalition government.

Mr Thaksin is in exile, convicted *in absentia* of corruption. But a government dominated by his allies has governed since democracy returned in last December’s elections. It looks poised to carry on under new party names despite the court ruling. Last month Mr Thaksin staged a huge rally of his “red shirt” supporters to remind his “yellow shirt” royalist foes in the PAD, who claim to be protecting the king against Mr Thaksin’s supposed republicanism, that he remains Thailand’s most popular politician.

Besides justified concerns about Mr Thaksin’s abuses of power, one of the royalists’ worries is that he was building, through populist policies such as cheap health care and microcredit, a patronage network and popular image that challenged the king’s. Another fear is that Mr Thaksin’s alleged generosity to Crown Prince Vajiralongkorn in the past was intended to build up influence with him once he succeeds to the throne. For these and other reasons, the little-told back-story of King Bhumibol is vital to understanding the predicament of this country of 64m people.

Many Thais will squirm at what follows, and will prefer the fairy-tale version of the king’s story. But the king’s past actions are root causes of a conflict dividing the country, and need to be examined.

Bhumibol's tale, even if stripped of the mythology his courtiers have spent decades constructing around him, is exceptional. The American-born son of a half-Chinese commoner accidentally inherits a throne close to extinction and revives it, creating one of the world's most powerful and wealthy monarchies, and surely the only one of any significance to have gained in political power in modern times. The king's charisma, intelligence, talents (from playing the saxophone to rain-making, a science in which he holds a European patent) and deep concern for his people's welfare make him adored at home and admired around the world. His image perhaps reaches its zenith in 1992, after the army shoots dozens of pro-democracy protesters in Bangkok, when television shows both the army leader (and prime minister) Suchinda Kraprayoon and the protest leader, Chamlong Srimuang (now a PAD stalwart), kneeling in an audience with him. Shortly afterwards General Suchinda resigns, and the king is given credit for the restoration of democracy.

However, Bhumibol's story is also that of a king who lost faith in democracy (if he ever really had it), who constantly meddled behind the scenes in politics and thus, in the twilight of his reign, risks leaving behind a country unprepared for life without "Father", as Thais affectionately call him. Understanding why a country that was until recently a beacon of pluralism in Asia has become such a "mess", as the king put it in 2006, is impossible without lifting the thick veil of reverence surrounding him.

This is not easy because, paradoxically, a king whose adulation by his subjects is supposedly near-universal is nevertheless deemed to need protection, in the form of the world's most ferociously enforced *lèse-majesté* law. Whereas other monarchies have mostly abolished or stopped enforcing such laws, Thailand's was made harsher in the 1970s. Even the most mild, reasoned criticism of the monarchy is forbidden, punishable by up to 15 years in jail. This has had a remarkable effect not just on Thais but on successive generations of Western diplomats, academics and journalists who, with few exceptions, have meekly censored themselves.

All the king's men

The origins of this, in part, were in the Vietnam war, in which America found King Bhumibol a staunch anti-communist ally. Recognising his value as an anti-red icon, America pumped propaganda funds into a campaign to put the king's portrait in every Thai home. Even today, although quick to decry undemocratic moves in other Asian countries, America rarely protests at the arrests of Thais and foreigners for criticising the monarchy. Foreign journalists and academics need visas and access to officialdom to do their jobs, and thus have played down the royal angle to any story.

As a result of this conspiracy of silence, only one serious biography exists of one of Asia's most important leaders. "The King Never Smiles", by Paul Handley, an American journalist (2006), notes that the king's restoration of the power and prestige of the Thai monarchy "is one of the great untold stories of the 20th century."

Mr Handley says that in the two intervening years nobody has disputed the main facts in his book; not even the most damning stuff, which explodes the myth that the king rarely intervenes in politics and then only on the side of good. Perhaps his gravest charge is that in 1976 the king seemed to condone the growth of right-wing vigilante groups that, along with the army, were later responsible for the slaughter of peaceful student protesters. As has happened often in modern Thai history (and could easily happen again now), the 1976 unrest was used as a pretext to topple the government and replace it with a royally approved one.

Bhumibol was 18 when he took the throne after the mysterious death of his ineffectual brother, King Ananda, in 1946. He promptly came under the sway of his uncles, princes itching to restore the power and wealth the crown had lost when the absolute monarchy was abolished in 1932. As he grew into his robes in the 1950s he created a comprehensive patronage system. The award of honours in exchange for donations to royal causes made the monarchy the predominant fount of charity. This "network monarchy", as it was dubbed by Duncan McCargo, a British academic, put the king back at the centre of Thai society and recovered much of his lost power.

A theme now embraced with gusto by the PAD, inspired by the king's speeches over the years, is that electoral politics is irretrievably filthy and that Thailand would do better with ad hoc rule by royally favoured "good men". The epitome of these is General Prem Tinsulanonda who, as unelected prime minister in the semi-democracy of the 1980s, did more than anyone else to foster the idea of the king's near-divinity. Now president of the privy council, General Prem is also supposedly above politics. But this too is a myth: he is widely seen as the mastermind of the 2006 coup. Shortly beforehand he told the army that the king was its "owner" and Mr Thaksin merely a replaceable "jockey".

The PAD is a motley bunch, united only by fanatical hatred of Mr Thaksin. It includes disgruntled businessmen, aristocratic ladies, members of a militaristic Buddhist outfit, formerly anti-monarchist intellectuals and reactionary army types. Its "new politics", consisting of a partly appointed parliament, sweeping powers for military intervention and, of course, a strong crown, is "Premocracy" redux.

The army is a big part of the country's predicament. Its generals believe they have a right to remove any government that incurs its, or the palace's, displeasure—taking its cue from the monarchy that has approved so many of its coups. These two obstacles to Thailand's democratic development are inextricably interlinked.

Mr Handley criticises the way the king has undermined the rule of law. When he has intervened to make known his wishes, his influence is such that it is taken as an order. In an example too late for the book, months before the 2006 coup the king ordered the country's judges to do something about the political crisis. In a recording of a phone call between two Supreme Court judges shortly afterwards, later posted on the internet, one says they need to avoid the perception that they are following palace orders because "foreigners wouldn't accept it".

Since then, their interpretation of the king's wishes has become increasingly clear, as the courts have rushed through cases against the former prime minister and his allies, while going easy on their critics. Some cases, such as the corruption allegations against Mr Thaksin, clearly deserved the courts' attention. Others were trivial, such as the court-ordered sacking in September of Samak Sundaravej, the pro-Thaksin prime minister, for doing a television cookery show. In contrast, rebellion charges against the PAD's leaders over their seizing of Government House were watered down and the courts freed them to continue the occupation.

None of this is to absolve Mr Thaksin and his cronies of their sins. But even his gravest abuse—a "war on drugs" in 2003, in which police were suspected of hundreds of extra-judicial killings—was not entirely his fault. The dirty war against supposed drug-dealers was misguidedly supported by Thais of all social classes. Even the king, in an equivocal speech that year, sounded at times as if he approved of it.

Father knows best

Other countries, from Spain to Brazil, have overcome dictatorial pasts to grow into strong democracies whose politics is mostly conducted in parliament, not on the streets. Thailand's failure to follow suit is partly because "Father" has always been willing to step in and sort things out: his children have never quite had to grow up. The Democrats, the parliamentary opposition, are opportunists, cheering on the PAD while seemingly hoping for another royally approved coup to land the government in their lap.

The rage of Bangkok's traditional elite against Mr Thaksin stems partly from embarrassment at having originally supported him. When he came to power in 2001 there was a feeling that Thailand needed a strong "CEO" leader, as the former businessman presented himself. His then party, Thai Rak Thai (TRT), was the first in Thai history to win a parliamentary majority on its own, and formed the first elected government to serve a full term, after which it was re-elected. Mr Thaksin's policies of improved public services and credit for the poor, though self-serving, promised to improve an unequal, hierarchical society: another reason why the old palace-linked elite wants him eliminated.

AFP

Princess Sirindhorn is preferred...

The government of generals and bureaucrats installed by the 2006 coup-makers performed miserably. In last December's elections, though TRT had been disbanded, Mr Thaksin's new People's Power Party won most seats. This spurred the PAD to resume its protests. In clashes in October PAD members fought the police with guns, bombs and sharp staves, hoping the army would again use disorder as the pretext for a coup. The PAD nevertheless blamed the clashes entirely on police brutality, and the anti-Thaksin Bangkok press let it get away with this. The death of one PAD member, apparently blown up in his car by the bomb he was carrying, was quickly buried. But the death of a young woman, reportedly when a police tear-gas canister exploded, became a *cause célèbre*.

Up to this point there were only whispers as to why the PAD enjoyed such lenient treatment—even from the army, which refused to help the police remove protesters from government offices. However, rumours of an extremely influential backer were confirmed when Queen Sirikit, attended by a clutch of cameramen,

presided over the dead woman's cremation. The king remained silent.

Nobody can discuss, of course, what effect the queen's support has had on the majority of Thais who still, apparently, back Mr Thaksin. A whirl of *lèse-majesté* accusations have been made against pro- and anti-Thaksin figures. But the PAD's ever more menacing behaviour, the palace's failure to disown it, and the group's insistence that Thais must choose between loyalty to Mr Thaksin and to the king, may be doing untold damage to the crown itself. Some of Mr Thaksin's voters must be contemplating the flip-side of the PAD's argument: if the monarchy is against the leader they keep voting for, maybe it is against them. Such feelings may only be encouraged by the PAD's condescending arguments that the rural poor, Mr Thaksin's main support base, are too "uneducated" to have political opinions, so their voting power must be reduced.

Bloomberg

…to the stiff crown prince

At a pro-Thaksin rally in July a young activist ranted against the monarchy, calling the king "a thorn in the side of democracy" for having backed so many coups, and warning the royal family they risked the guillotine. She was quickly arrested. What shocked the royalist establishment was not just the startling criticism of the king—but that the activist was cheered. "It is more and more difficult for them to hold the illusion that the monarchy is universally adored," says a Thai academic.

This illusion is crumbling amid growing worry about what happens when the king's reign ends. The fears over Mr Thaksin's past influence on the crown prince are overshadowed by far deeper ones about the suitability of the heir to the throne. Vajiralongkorn has shown little of his father's charisma or devotion to duty, and in his youth suffered from a bad reputation. In a newspaper interview he defended himself against accusations that he was a gangster. But even his mother, in an extraordinary set of interviews on a visit to America in 1981, conceded he was a "bit of a Don Juan". "If the people of Thailand do not approve of the behaviour of my son, then he would either have to change his behaviour or resign from the royal family," she said.

The Thai press dutifully self-censored and certainly would not repeat these criticisms now. Nevertheless, the crown prince will probably remain deeply disliked. There has been speculation over the years that the king might pass the crown to the much more popular Princess Sirindhorn, who now does most of his job of touring the country to meet the masses. The 8pm nightly royal news on television constantly shows her, smiling through endless visits and ceremonies, making merit at Buddhist temples and doing other good works. In the crown prince's rare appearances he looks reluctant and stiff, and is rarely seen meeting ordinary people.

The patrilineal tradition of the Chakri dynasty is unlikely to be broken. And the prominent role played by the crown prince in Princess Galyani's cremation removed any doubts about whether he was the chosen heir, says a Thai academic. Even so, many Thais, a superstitious people, will remember an old prophecy that the dynasty would last for only nine generations—Bhumibol is the ninth Chakri king—and that a tenth would be a disaster.

Some day my prince…

For all these reasons, a former senior official with strong palace ties says there is a terror of what will come after Bhumibol. "When we say 'Long live the king' we really mean it, because we can't bear to think of what the next step will be," he says. Most Thais are too young to remember a time before Bhumibol took the throne. His death will be a leap into the unknown. It would seem wise for royal advisers to be doing some succession planning. But, says the former official, none seems to be going on. And any advice offered would probably not be heeded: "The king is his own man. Nobody advises the king," he says.

In the shorter term, a trigger for renewed confrontation may be, if a pro-Thaksin government survives, its plan to amend the constitution passed during the military regime that followed the 2006 coup. Some mooted changes, such as restoring a fully elected Senate, seem reasonable. But the PAD assumes the main motive is to relieve Mr Thaksin and his allies of the various legal charges against them. Neither side yet seems willing to compromise. Both have made clear their readiness to use street mobs to achieve their ends.

A messy but effective "Thai-style compromise" is still hoped for, to pull the country back from the brink. It

is even possible to dream of the red- and yellow-shirt movements transforming themselves into a well-behaved, mainstream two-party system with broad public participation. This, in turn, might help the country escape the dead hand of the courtiers and generals who are trying to drag the country into the past. But none of this is likely.

If Bhumibol's glittering reign either ends in conflagration or leads to a Thailand paralysed by endless strife, with nobody of his stature to break the deadlock, it will be a tragedy. But he will have played a leading role in bringing about such an outcome. There is of course an opposing case to be made—that the king has been a stabilising influence in a volatile age, that his devotion to duty has been an inspiring example and that he has only ever done what he thought best for the country. But that case has been made publicly, day in, day out, for decades. Thais are not allowed to discuss in public the other side of the coin.

Race in Obama's America

Searching for the promised land

Dec 4th 2008 | WASHINGTON, DC
From The Economist print edition

What will Barack Obama's presidency mean for race relations?

Illustration by KAL

AS HE sat in a television studio in Alabama on election night, Artur Davis saw a white cameraman with tears in his eyes. It was while Barack Obama was giving his victory speech in Chicago. Of course it was an emotional moment, says Mr Davis, a young black congressman. But he was still surprised to see a cameraman cry, because "they're a pretty cynical lot."

"Black Man Given Nation's Worst Job" was how the *Onion*, a satirical newspaper, reported Mr Obama's triumph. But most Americans are still overjoyed to see such conspicuous evidence that their country really is a place where anyone with talent and drive can make it. And blacks are ecstatic. Some 80% of them tell pollsters that Mr Obama's victory is "a dream come true", while a whopping 96% think it will improve race relations.

The election provided solid evidence that race matters less in America than pessimists suppose. Mr Obama won a bigger share of the popular vote than any Democrat since Lyndon Johnson in 1964, and more of the white vote than either John Kerry or Al Gore. Outside the South, he beat Mr Kerry's share of the white vote in every state except New Mexico and Arizona (John McCain's home state). Even among southern whites, Mr Obama did well. He scored worse than Mr Kerry in only five states: Alabama, Arkansas, Louisiana, Mississippi and West Virginia.

But what difference will a black president make for black Americans? "He's not a magician or a messiah," says Marc Morial of the National Urban League, a civil-rights group. He will, however, be a role model. For one thing, "he finished school," says Mr Morial. For another, he is a good father. And when black parents tell their children that if they work hard they may grow up to be president, those children will no longer find the notion absurd.

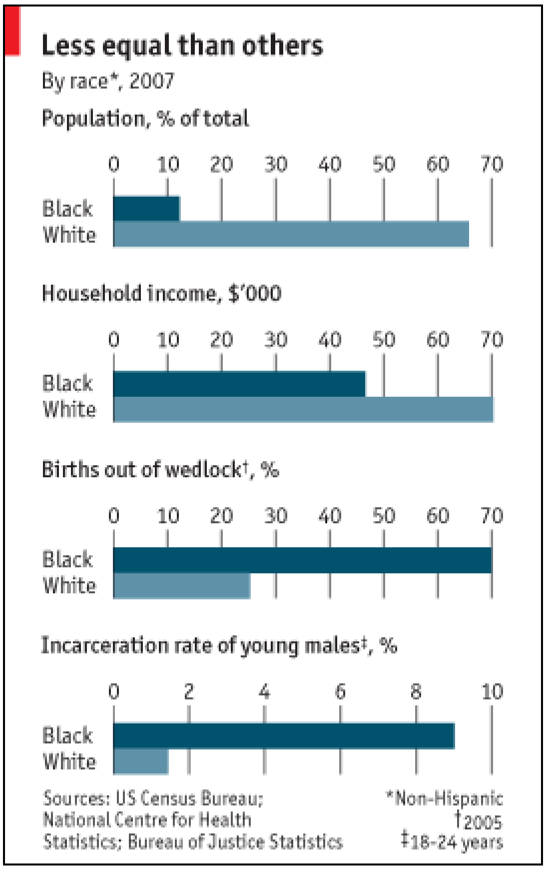
Some pundits think the role of role-models is exaggerated. Shelby Steele of the Hoover Institution, a conservative think-tank, doubts that having a black man in the White House will have much effect on the proportion of African-Americans who are born out of wedlock (currently more than two-thirds) or wind up in jail (black men are nearly seven times more likely than whites to be locked up).

Maybe so. But it is already affecting the way black Americans are portrayed in the news. Not long ago, when television producers wanted a talking head to represent black America, they would call up Jesse Jackson or Al Sharpton, who would always say the same thing about every problem—that white racism was to blame. Now the spotlight is falling on black leaders who have led more than just protest marches. Deval Patrick, the first black governor of Massachusetts, is a close friend of Mr Obama's. Mr Davis, who

first met Mr Obama at Harvard, plans to be the first black governor of Alabama, of all places. Valerie Jarrett, one of Mr Obama's closest advisers (who is also black), boasts that her boss will make public service cool, thereby attracting the best talent into government.

Mr Obama's early choices for important jobs include two dynamic African-Americans: Eric Holder as attorney-general and Susan Rice as ambassador to the United Nations. Apart from a flap over Mr Holder's role in advising Bill Clinton to pardon a dodgy financier, neither has attracted much attention. Americans have grown used to seeing blacks in top jobs.

Mr Obama is always respectful towards the older generation of civil-rights leaders. He likens them to Moses, who led his people to the edge of the promised land. It is now up to younger leaders, he says, to complete the journey. Some of his elders are unwilling to be shoved aside. In July, unaware that his microphone was turned on, Mr Jackson said he would like to cut off Mr Obama's testicles. Mr Obama had suggested that black fathers should not abandon their children. Mr Jackson deemed this "talking down to black people".



Advocates of colour-blind government think Mr Obama's victory helps their case. If America can elect a black president, racism must be less of an obstacle to black progress than previously thought. The time for racial preferences, they argue, must surely be past. Voters in Nebraska agree. On November 4th it became the fourth state in 12 years to ban official discrimination in favour of "under-represented" minorities in hiring, contracting or public education.

A study by Richard Sander of the University of California, Los Angeles, found that when black students are admitted to law school with lower test scores than whites or Asians, those black students are less likely to cope. More drop out, and fewer pass the bar exam than would have done under race-neutral admissions policies. But many universities are convinced that racial preferences ("affirmative action") are necessary to diversify the intake, both racially and sociologically.

Mr Obama's views are hard to pin down. He has suggested that affluent blacks such as his own daughters should not get special treatment when applying to college, and that poor whites sometimes should. But he also says he supports affirmative action, his website includes no plans to scale it back and his allies would howl if he did. "I think probably in his heart of hearts he knows better, but I'd be shocked if [Mr Obama] does away with affirmative action," says Mr Steele.

Mr Obama's black supporters hope he will make good on promises to root out racism in the criminal-justice system and the workplace by enforcing existing laws more vigorously. Many also seek "environmental justice", which means less pollution near black areas (more than half of those living within two miles of a toxic waste dump are minorities). And everyone expects a push to improve the relatively poor health of black Americans, who die, on average, five years younger than whites. Reforming health in general will have a marked effect on blacks, because they tend to get the worst care.

But the new president's most urgent task will be to grapple with the economic crisis. If he succeeds, Americans of all hues will cheer.

The economy

A thoroughly modern recession

Dec 4th 2008 | WASHINGTON, DC
From The Economist print edition

The current recession fits the pattern of recent ones—but is likely to last longer

BUSINESS expansions, it used to be said, did not die of old age; they were murdered by the Federal Reserve. Yet with the official announcement on December 1st that America had entered recession last December, the traditional explanation for recessions is wearing awfully thin.

Though it may end up as one of the longest recessions, if not the longest, of the post-war era, the current episode still seems to have more in common with the mild downturns of 1990-91 and 2001 than the more wrenching affairs that came before. As Robert Hall, an economist at Stanford University, notes, earlier recessions, like that of the early 1980s, were caused by the Fed raising interest rates sharply to squelch emerging inflation and holding them high even once the recession began. In the current and past two recessions, interest rates never got very high and the Fed actually began to lower them before the contraction began. In a paper written a year ago*, Mr Hall described such apparently "causeless" recessions as perplexing.

Mr Hall is chairman of the committee of the National Bureau of Economic Research, an academic group that "officially" declares when recessions begin and end. He now says that the current episode fits the "modern recession" template not just in the lack of a significant monetary spark, but also in the divergence between employment and output. It used to be that full-time employment fell more slowly than output around recessions; since 1990 it has fallen as, or more, quickly. While employment has declined steadily since December, real GDP as of the third quarter was still above its level at the end of 2007.

By October employment was down 0.9%, or 1.2m, from the previous December. If consensus estimates are correct, the drop will have grown to 1.1% by November. That is close to the 0.9% average at the equivalent stage of the six previous downturns. But the drop in output has been milder, because firms nowadays are much quicker to cut employees when sales fall.

Although the recession has not yet been much deeper than its predecessors, it almost certainly will be by the time it is over. With banks still deleveraging and home prices still declining, consumer spending will remain under pressure for many months yet. Business investment is pulling back sharply: orders for capital goods sank 4% in October and commercial construction is about to feel the effects of the collapse in the market for commercial mortgage-backed securities. Exports will be pummelled by the global recession and the stronger dollar. Many economists expect the recession to continue until mid-2009, which would be longer than those of 1973-75 and 1981-82. Moreover, employment is likely to keep falling after the official end of the recession.

So if the Fed did not cause this and the past two recessions, what did? In his paper of a year ago, Mr Hall called them "mystery shocks". Now, though, there's less of a mystery; in both 2001 and now one sector experienced dramatic over-investment (technology then, housing now). The paradoxical truth may be that the less volatile business cycle (until recently) encouraged investors to take bigger risks with borrowed money, driving asset prices too high and ending in damaging busts. Some would still blame the Fed, for not deflating asset bubbles with higher interest rates. In a recent speech, Donald Kohn, the vice-chairman of the Fed, rejected that charge but pleaded guilty to a lesser one: by better controlling inflation, central banks helped moderate the business cycle, which bred investor complacency. They thus "may have accidentally contributed to the current crisis." The Fed may no longer be the prime suspect for causing recessions; but it is still an accessory to the crime.

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*"How much do we understand about the modern recession?" By Robert Hall, Brookings Papers on Economic Activity 2, 2007.

The Senate

Firewall erected

Dec 4th 2008 | ATLANTA
From The Economist print edition

The Democrats will not now have a Senate supermajority

ON A freezing election-eve in downtown Atlanta, T.I., a local rapper attired in large, shiny jeans sitting loosely well below his waist, orated on the steps of Georgia's state capitol. "The nation has appointed our leader," he drawled. "We need to enable Barack Obama, President Barack Obama, to have control of this house."

Whether or not to do just that was the question put to Georgia's voters on December 2nd, when they went to the polls to choose a senator in a run-off election between Saxby Chambliss, the Republican incumbent, and Jim Martin, his Democratic challenger. Neither took a majority of votes in last month's elections. In the resulting run-off campaign, Mr Chambliss told Georgians that he would be a "firewall" against hefty Democratic majorities in Congress: his presence would guarantee the Republicans at least 41 votes in the Senate, enough for them to mount filibusters, the chamber's formidable procedural barrier to legislation. Mr Martin countered that he should be in Washington "to help our president". The people of Georgia strongly favoured Mr Chambliss.

After a deeply depressing November for them, Republicans are now talking about how they have turned a corner with Mr Chambliss's victory. "Republicans still know how to win elections!", Mike Duncan, the chairman of the Republican National Committee, jubilantly declared on election night. Party luminaries rallied for Mr Chambliss; Sarah Palin drew thousands around the state in a four-stop tour the day before the election, promising to rebuild the party.

But Georgia was always going to be favourable territory. Mr Obama lost the state by five points last month. Mr Martin trailed Mr Chambliss by three points in the original Senate vote in November; but under state rules, Mr Chambliss needed 50%-plus-one of the votes cast, and thanks to the presence of a libertarian candidate he failed to get them, forcing a run-off between the top two candidates. This time Mr Martin suffered from the absence of Mr Obama at the top of the ticket, which depressed black turnout and helped Mr Chambliss to a thumping, 14-point win.

That a red McCain state plumped for a Republican can hardly offer much genuine consolation to the party. Still, the number 41 was on everyone's lips at Mr Chambliss's victory party. With 60 Senate seats, the Democrats would have had the numbers to break any Republican filibuster.

They, could still, however, get pretty close to the magic number. They already have 58 seats in the bag, up from 51 in the outgoing Congress. And the Senate race in Minnesota between Norm Coleman, the Republican incumbent, and Al Franken, a professional comedian, is subject to a recount, and may be unresolved for weeks. Mr Coleman currently leads by only 316 votes. So far Mr Coleman has challenged 3,241 ballots, and Mr Franken has challenged 3,085, but only a small number are likely to succeed. Mr Franken hopes to pick up votes by including absentee ballots in the recount.

Local officials must complete their recounts by December 5th. But Larry Jacobs, a professor at the University of Minnesota, says the recount is only act one in a three-act play: next comes the state canvassing board's meeting on December 16th to tally the results and review the challenged ballots, then possible legal challenges. The fight could even move to the Senate, which has the constitutional power to determine whether its members have been properly elected.

Whether 58 or 59 in the Senate, though, Democrats have some reason for optimism. Not only will their majority be large, but there are also some moderate Republicans in the Senate who might yet be willing to co-operate. The Democrats will also be able—justly or unjustly—to blame future legislative failures on Republican intransigence in the Senate, their favourite excuse over the last two years. T.I. should take heart: the house is still theirs.

Economist.com WORLD UNITED STATES

Barack Obama's BlackBerry

Subject: Israel-Palestine

Dec 4th 2008
From The Economist print edition

Another e-mail from the president-elect's inbox

“THE big question is: do you want to end this conflict or just tamp it down? The arguments for the first are self-evident. Palestine fouls up our diplomacy: Israel is thrown at us whenever we ask Muslim allies for help. Unsolved, this conflict generates wars. The last administration was tripped up by the Israel-Hizbullah war in 2006. Another round in Lebanon—or a small war in Gaza, or a big one between Israel and Iran or Syria—is possible at any time.

But the argument for just tamping down is also strong. Presidents who go for the whole package waste their time and fail. Jimmy Carter got peace with Egypt but nothing for the Palestinians. Hillary will tell you Bill spent more time on this than anything else in foreign policy, but he failed too. His excuse is that Arafat suckered him (“Don't you ever trust that son of a bitch,” was his parting advice to Colin Powell), but now that Arafat's dead the Palestinians have two addresses instead of one. The Europeans tell us that Hamas can live with a two-state deal, despite its *spiel* about destroying Israel. But if we talk to Hamas we knock the legs from under Mahmoud Abbas. For now he's still our Joe and the Palestinians' president.

As for Israel, Ehud Olmert was a cooing dove compared to Binyamin Netanyahu, who looks like winning the election in February. He plays annoyingly well on the Hill and pushes the line that Abbas can't deliver and that Hamas is a terror front for Iran (which, by the way, he wants us to bomb).

Even if you decide against going the whole hog, you'll lose nothing by saying forcefully *before* Israel votes that we want a two-state solution with a shared Jerusalem and little modification of the pre-1967 line. Spell out the percentages. Netanyahu might as well know he won't get another free pass to jerk us around on settlements. Then, honour satisfied, you could decide to put the full package to one side and try something more modest, like peeling Syria from Iran by dangling the Golan Heights. Israel's own security people want a Syria deal.

If you want to get a settlement with the Palestinians too, we must start early and allow time. If Hillary is

too grand to shuttle, appoint an envoy reporting to you to (1) make our Arab friends wangle Hamas back into a Palestinian unity government; and (2) get international buy-in to an "Obama plan". This will in fact consist of the "parameters" Bill Clinton drew up in 2000 and are the nearest you'll get to a sellable compromise. Hillary must help you sell this in New York as well as Riyadh. Only then should you step in to close the deal—after figuring out what mix of heat and reassurance to apply to the Israelis. They're the ones who have to give up something real."

Cyberwar

The worm turns

Dec 4th 2008
From The Economist print edition

A cyber-attack alarms the Pentagon

BATTLEFIELD bandwidth is low at best, making networks sticky and e-mails tricky. American soldiers often rely on memory sticks to cart vital data between computers. Off-duty, they use the same devices to move around music and photos. The dangers of that have just become apparent with the news that the Pentagon has banned the use of all portable memory devices because of the spread of a bit of malicious software called agent.btz.

This is a “worm”, meaning that it replicates itself. If you have it on, say, the memory card of a digital camera it will infect any computer to which you upload photos. It will then infect any other portable memory plugged into that computer (the cyber-equivalent, one might say, of a sexually transmitted disease). On any computer hooked up to the internet, this variant tries to download more nasty stuff: in this case two programs that access the hard-drive. Was it a humdrum crime of trying to steal banking details? Or something more serious? The trail has gone cold.

In any case, the malicious software (malware in the jargon) penetrated at least one classified computer network. The problem was severe enough for Admiral Michael Mullen, the chairman of the joint chiefs of staff, to brief George Bush on it. Officials are saying little more than that.

Kimberly Zenz, an expert on cyberwarfare at VeriSign iDefense, a computer security company that is investigating the attack, notes that it is not clear that agent.btz was designed specifically to target military networks, or indeed that it comes from either Russia or China (two countries known to have state-sponsored cyberwarfare programmes that regularly target American government computer networks).

Indeed, she says, by the standards of cyberwarfare, agent.btz is pretty basic; it is a variant of a well-known bit of malware called the SillyFDC worm, which has been around for at least three years. By contrast, a government commission warned Congress last month that “since China’s current cyber operations capability is so advanced, it can engage in forms of cyberwarfare so sophisticated that the United States may be unable to counteract or even detect the efforts.”

The most remarkable feature of the episode may not be the breach of security, but the cost of dealing with it. In the civilian world, at least one bank has dealt with agent.btz by blocking all its computers’ USB ports with glue. Every bit of portable memory in the sprawling American military establishment now needs to be scrubbed clean before it can be used again. In the meantime, soldiers will find it hard or outright impossible to share, say, vital digital maps, let alone synch their iPods or exchange pictures with their families.

Feral hogs

If you go down to the woods today

Dec 4th 2008 | ST LOUIS
From The Economist print edition

AUTUMN is a time for country walks, and, if you are that way inclined, for a spot of bang-bang. But hunters and hikers alike are liable to come face to face with a nasty surprise: a growing number of feral hogs, the destructive descendants of domesticated animals, are stalking America.

AP

Millions more to go

During its short and brutal life, a feral hog may grow to become a monster of several hundred pounds, covered with bristly hair and fronted with a set of fierce, killing tusks. One hog shot in Georgia in 2004 lives on in legend as Hogzilla because of the claim, disputed by some, that it was 12 feet long (almost four metres) and weighed 1,000lb (about 450kg).

There are thought to be between 4m and 5m feral hogs at large in America, spread across 38 states. The biggest population is in Texas, but states from Florida to Oregon are infested and worried. Feral hogs destroy the habitats of plants and animals, spread diseases, damage crops, kill and eat the eggs and young of wildlife and sometimes menace people with their aggressive behaviour.

The problem originated with the Spanish conquistadors, who took herds of pigs with them as they marched across the American continent. Stragglers reverted to their wild state. Much later "sportsmen" began releasing hogs into reserves for commercial hunting. More recently still declining pork prices have induced farmers to turn some of their stock loose rather than continue feeding them. Pigs produce so many piglets that a feral herd can double or even triple within as little as a year.

Governments and individuals across the country are getting involved. In 2000 Missouri adopted a shoot-on-sight policy with no restrictions on time or place. Other states are encouraging the trapping, poisoning and snaring of the beasts. "Hog dogs" have been trained to track down the herd for hunters. In many states aerial hunting from helicopters has been employed as a pricey but effective solution. But the creatures are intelligent and adaptable, so these efforts are not keeping pace with the exploding feral hog population. Missouri recently made it a crime to knowingly release pigs from confinement. However, the herds continue to grow and spread. Take care.

Urban development

City of the future

Dec 4th 2008 | MESA
From The Economist print edition

A rare opportunity to build an urban centre from scratch

SCOTT SMITH likes to introduce himself as mayor of “the biggest city you’ve never heard of”. Mesa is twice the size of Washington, DC, and has a population greater than Cleveland or Miami. This week the Arizona settlement annexed five square miles (13 sq km) of desert, on which a new urban centre will rise. The biggest city you have never heard of plans to become a lot bigger.

Until it was temporarily halted by foreclosure and the credit crunch, Mesa was an extreme example of sunbelt growth. In 1940 it contained just 7,000 inhabitants, many of them Mormons. Then the explosion began. Driven by migration from the rest of America, Mesa’s population roughly doubled in each of the next five decades. It now contains almost half a million people and has sprawled into a metropolis centred around the similarly fast-growing city of Phoenix.

It is the quintessential low-slung suburban city—what Yale University urbanist Dolores Hayden calls a “boomburb”. Mile after mile of strip malls and tract houses, whose evocative names and fanciful arches cannot disguise the fact that they are large, stucco-covered boxes, dominate the landscape. Aside from the city hall and a shiny arts centre, most of Mesa’s downtown district is only one storey high.

When Mesa was growing explosively, the lack of a plausible downtown hardly mattered. But the city has been battered by foreclosure and may now be losing residents. Although it is hardly the only casualty in the region, Mesa is in especially poor shape. Too old to seem very new, but not nearly old enough to seem quaint, its appeal has dimmed. Mesa’s solution is typical of the sunbelt: start building.

Mesa’s “do-over”, as Mr Smith calls it, will take place south-east of the existing city. The land annexed this week is owned by a single developer, DMB, allowing for a unified vision. The opportunity to construct a new city centre is rare, and Mesa will become a test of modern urban design. It is looking both to the future and a long way into the past.

The forward-looking part of the plan is that Mesa will be built around an airport. Rather than pushing air traffic to the fringe of the city, as most cities try to do, Mesa will build around its runways. It hopes to become what John Kasarda of the University of North Carolina calls an “aerotropolis”—a city as tied to air traffic as 19th-century cities were to railways.

Mesa’s Gateway airport, a former military site with three runways, currently sees only a few commercial flights, many of them charters heading for Las Vegas. Arizona’s main hub is Phoenix-Sky Harbour airport, 28 miles (45km) to the west. But assuming that central Arizona eventually resumes its rapid growth, another airport will be needed. The city plans to build a big new passenger terminal. It also hopes to create a high-tech job cluster that will draw part of its labour force and some of its ideas from a polytechnic university that is already next to the airport.

The backward-looking part of the plan has to do with the new city’s appearance. Rather than dictating uses for neighbourhoods, as almost all American cities do—apartments here, light industry over there—Mesa’s planners will determine the appearance of buildings. They want to encourage a mixture of uses in one street, and allow for change (so a warehouse might eventually be converted into apartments). They hope that, by putting many of the essentials of life in a small area, people will walk around. Mesa’s scorching summers might be a problem here.

Although DMB claims the new city will be an exemplar of “21st century desert urbanism”, it actually looks rather more like a city of circa 1900. The new Mesa will contain lots of neighbourhood parks, the better to encourage sociability. Its downtown will depart from the north-south-east-west grid that most Western cities follow. The tilt is reckoned to be better for catching solar rays, but it is also meant to be a nod to history. Some older Western cities (Denver and Los Angeles, for example) have downtown districts that

depart from the compass pattern.

The new city will be a major showcase for “new urbanist” theories, which have so far been applied most famously in much smaller towns like Celebration and Seaside, both in Florida. Mesa’s willingness to experiment is impressive. Yet Richard Reep, a Florida architect, is wary: “Any time architects start thinking they can influence social order, watch out.”

Renaissance festivals

Be ye merry

Dec 4th 2008 | PLANTERSVILLE, TEXAS
From The Economist print edition

An alternative take on the 16th century

Texas Renaissance Festival

A couple of Texans at play

DEEP in the pine forest of east Texas, a middle-aged couple sat stiffly on a bench. “We met a few weeks ago in church and I thought it would be nice to come here to get to know each other,” said the man hopefully.

The woman looked doubtful. Her date had taken her to the Texas Renaissance Festival, an annual celebration and re-enactment of 16th-century village life. A hundred yards away a magician pulled cards from his mouth with a sour expression. Next to that a tout herded guests into the House of Discount Torture, a haunted house focused on special effects. “No goth kid with a self-esteem problem chasing you down the hallway with a chainsaw,” he promised.

The Texas festival is the largest Renaissance festival in the country; it had more than 400,000 visitors over eight weekends this year. But more than 150 of these productions have popped up in America since 1963, when a “pleasure faire” was first held in southern California. They are typically out in the country and can be a major economic boon to a rural community: lots of people, it turns out, like to watch jousting and feast on turkey legs. In one Maryland county, officials are desperately trying to figure out how they can stop the local effort from moving to a larger site in another county. Apart from a boat show, the festival is the area’s largest tourist attraction.

Some enthusiasts take their history seriously, studying fan sites that cover falconry or Shakespearean insults. But all kinds of performance art are encouraged. Revelry is the main point, and though the theme is Elizabethan, the execution is vigorously anachronistic. Sarah Tipton, the marketing co-ordinator, reckons that people come to these festivals to escape their daily lives. In this case there were chainmail bikinis, burlap loincloths and a spaghetti-eating contest.

The festivals naturally attract their share of free spirits. A doctor and a lawyer, dressed in purple velvet, allowed that they had met at a “related” event and refused to elaborate. But there is room for everyone. A retired prison guard in a trucker hat and bristly moustache said that he and his friends had been coming to the Texas festival several times a year for the past 20 years. They liked to watch the comedy acts and flirt with the serving wenches. “This”, he said, “is the highlight of our lives.”

Lexington

Jumping the gun

Dec 4th 2008
From The Economist print edition

Barack Obama's first 100 days have already begun

Illustration by KAL

EVER since Franklin Roosevelt put the building blocks of the New Deal in place in his first 100 days in office, presidents have been subjected to the 100-days test. For that brief spell, they have a unique opportunity to put their imprint on history—a honeymoon period when the public gives them the benefit of the doubt and Congress defers to their popular mandate—and they squander it at their peril.

One of the most striking things about Barack Obama is that his 100 days seem to have already begun. Mr Obama repeatedly insists that America only has "one president at a time". But since election day that "one president" seems to have been the junior senator from Illinois rather than the former governor of Texas.

Mr Obama has dominated the news with a relentless succession of carefully timed and often dramatic press conferences. He has embraced his former nemesis by making Hillary Clinton secretary of state. He has outraged the left by keeping Robert Gates at the Pentagon and making James Jones, a former NATO supreme commander who campaigned for John McCain, his national security adviser. He has reassured the markets by putting Tim Geithner in the Treasury and appointing Larry Summers as his White House economics guru. And he has made history by appointing Eric Holder as America's first black attorney-general. The Justice Department, which once spied on Martin Luther King, will now be in the hands of a child of the civil-rights revolution.

This is partly deliberate stagecraft. Mr Obama and his advisers understand the importance of controlling the news. They have also long been obsessed by presenting a "presidential" image of Mr Obama, a man who was nothing more than a state senator four years ago.

In June he appeared at a Democratic governors' meeting in Chicago accompanied by a presidential-looking seal—an eagle clutching an olive branch in one claw and arrows in the other and emblazoned with the slogan *Vero Possimus* (Yes we can). The seal soon disappeared in a hail of ridicule. In July he flew to Europe on a plane that looked remarkably like Air Force One and delivered a public address to hundreds of thousands of swooning Germans (his plans to give his speech at the Brandenburg Gate were eventually foiled, so he had to make do with a lesser monument). At the Democratic convention he gave a speech from a stage decorated with Greek pillars. This is not a man who is uncomfortable with the trappings of power.

But much more important than stagecraft is the force of circumstances. Americans are not only desperate for the change that Mr Obama offered. They are desperate for someone to fill the vacuum at the heart of government. The Bush presidency has been shrinking ever since his second-term agenda (primarily Social Security reform) collapsed in Congress and his remaining credibility was blown away in 2005 by Hurricane Katrina.

Mr Bush gave a rare television interview to ABC News this week, in which he expressed sympathy for the victims of the recession and lamented intelligence failures before the Iraq war. But for most of the past year he has been missing in action—shunted to the sidelines by the McCain campaign and wheeled out only when the dismal economic news made a statement from the top man impossible to avoid. A president who enjoyed a highly successful first 100 days of his own—including a big tax cut and a sweeping reform of education—has all but vanished.

The scale of the global economic crisis has also forced Mr Obama to adopt a quasi-presidential stance. The bad news has been so relentless (on December 1st the Dow dropped by 7.7% on news that the economy is officially in recession), and the policy response by the powers that be has been so confused (Hank Paulson first promised to buy up bad debt and then decided to take stakes in the banks instead), that America has sometimes seemed to be on the edge of a full-scale meltdown. Add the terrorist outrages in Mumbai to the mix and the president-elect has had no choice but to seize the limelight.

The Bush administration has done as much as it can to reassure the markets that the transition will be seamless. And Mr Obama has done as much as he can to show that he has the wherewithal to run the economy—giving regular press conferences on the subject and outlining his proposed stimulus plan. A lame-duck Congress may even pass a version of that plan before Mr Obama comes to office. FDR had to wait until his inauguration before unleashing an avalanche of legislation. Mr Obama may be able to go one better and legislate from the “The Office of the President Elect”, as his new podium now has it.

The downside

The premature start to Mr Obama’s first 100 days is rife with risk. Presidents inevitably use up their stock of political capital as they spend it. They also gradually start to disappoint their friends and allies. Mr Obama is shielded to some extent by his race and charisma. But he has already sorely tested the patience of some of his most loyal supporters—first by appointing so many Clintonites to high office and then by keeping Mr Gates at the Pentagon. Can it be long before the netroots begin to complain that they have been duped—that “change” is simply more of the same? And can it be long before the ravening beast that is the media tires of the story about the first black president and starts looking for Mr Obama’s feet of clay?

Against that it must be said that the imprint Mr Obama is already putting on history is impressive. He has demonstrated that he is self-confident enough to surround himself with big brains and strong personalities. He is also signalling that he intends to govern pragmatically—changing America’s foreign policy by degrees, not precipitously, and focusing his energies on America’s miserable economy. So far Mr Obama’s premature 100 days have gone better than anybody could have hoped.

Canada

A most un-Canadian caper

Dec 4th 2008 | OTTAWA
From The Economist print edition

Stephen Harper's sudden stumble prompts the opposition to unite and could cause a change of government, a constitutional crisis—or both

Illustration by David Simonds

THERE are no tanks in the streets or protesters occupying the airport, but Canada is in the midst of political turmoil the like of which this normally placid country has rarely seen. Only seven weeks ago Stephen Harper, the prime minister, won a second term for his Conservative government, but once again without winning a parliamentary majority. Now the three disparate opposition parties—the centrist Liberals, the socialist New Democrats (NDP) and the separatist Bloc Québécois—have ganged up in order to oust the Conservatives and replace them with a centre-left coalition. That left Mr Harper scrabbling for survival. As *The Economist* went to press, he was expected to ask Michaëlle Jean, who as governor-general acts as Canada's head of state, to suspend Parliament for a month—though he might instead seek its dissolution and a fresh election.

Since the opposition parties hold a combined 163 of the 308 seats in the House of Commons, if they stick together they would easily win a confidence vote against the government (which holds 143 seats) if this went ahead as scheduled on December 8th. Their alliance is an unlikely one. Stéphane Dion, the Liberal leader, is an academic from Quebec who came into politics a decade ago expressly to oppose the French-speaking province's separatists, represented by Gilles Duceppe and his Bloc Québécois. Jack Layton, the NDP leader, has spent his career savaging previous Liberal governments.

Yet on December 1st the three leaders wrote to the governor-general offering to form a Liberal-NDP coalition government. The Bloc will not join in but its 49 MPs will back it for the next 18 months. The letter prompted Ms Jean, a former refugee from Haiti, to cut short a trip to Europe to rush back to Ottawa. Under the constitution, it is the governor-general's prerogative to invite a party leader to form a government, with or without an election.

This sudden decision to stage a political coup was prompted by a government economic statement on November 27th. The ostensible reason for opposition outrage was that Jim Flaherty, the finance minister, offered no new measures to stimulate the economy. But that smacks of a pretext: despite alarmist headlines, for now the economy remains in relatively good shape, growing at an annual rate of 1.3% in the third quarter of 2008. Unemployment is still low. Even the gloomiest forecasters so far see only a modest contraction in 2009. The government has promised help for Ontario's car industry. Mr Flaherty insisted that previously announced measures, including tax cuts, would suffice until the budget due on January 27th.

What really provoked the opposition parties was that, having said there was no need for extraordinary

measures, Mr Flaherty threw in some highly partisan ones: a big cut in public funding for political parties (which provides 60% of opposition revenues but less than 40% for the Conservatives); a ban on strikes by public-service unions; and making it harder for women civil servants to complain if they are not paid the same as their male colleagues.

A joke doing the rounds in Ottawa holds that Mr Harper, credited with having united two feuding right-of-centre parties to form the Conservatives in 2003, has now done what was thought impossible and united the left too. Inserting the cuts in political financing into the financial update was an “appallingly dumb decision”, says Roger Gibbins of the Canada West Foundation, an Alberta-based think-tank. The government quickly dropped the measures on political funding and the right to strike. But it was too late to stop the opposition’s plans to seize power.

The opposition’s putative coalition is beset with flaws. Its problems start with its leader. Mr Dion piloted the Liberals to their worst-ever showing in the election. He is due to be replaced as Liberal leader at a party convention in May. Then there is policy, which has required some difficult compromises. Mr Dion has agreed to drop his unpopular carbon tax (he now backs a cap-and-trade system for carbon emissions). Mr Layton has dropped his previous opposition to cuts in corporate taxes. A further awkwardness concerns reliance on the votes of the Bloc, whose raison d’être is the break-up of Canada.

All this means that Mr Harper may yet manage to cling to power. He has defiantly raised the political temperature. He has accused the Liberals of selling out the country to separatists (in fact, in his first term he sometimes relied on separatist votes and when in opposition the Conservatives similarly offered to replace a Liberal minority government with help from the Bloc and the NDP). The Conservatives are repeating that message in a blitz of radio and television advertising, as well as planning rallies across the country. He has vowed to “use all legal means to resist this undemocratic seizure of power”.

Nevertheless, the prime minister is damaged. Some pundits have suggested that the Conservative government will survive only if Mr Harper steps down. A control freak who does not allow ministers to speak publicly without his approval, he can hardly blame others for his misfortune. Although there is no open revolt in Conservative ranks, several ministers pointedly failed to applaud the prime minister in the House of Commons this week.

But Mr Harper shows no sign of contrition. “The highest principle of Canadian democracy is that you get your mandate from the Canadian people,” Mr Harper told the House of Commons. Suspending Parliament for a month would buy time—and might cool the opposition’s ardour for unity. But it might also allow the Liberals to bring forward their leadership vote and replace the lacklustre Mr Dion. And it was not certain that Ms Jean would agree to suspend Parliament to enable Mr Harper to dodge the confidence vote.

Whatever happens, this week’s events may change Canadian politics for ever. Only the Liberals or Conservatives have governed in Ottawa since 1926, but Canada now has four significant parties (a fifth, the Greens, won nearly 7% of the vote but no seats). Coalition politics may be inevitable. Are Canadians ready for it? An opinion poll this week by Angus Reid Strategies found that 35% of respondents wanted the Conservatives to stay in power, and 40% favoured change. Only 32% wanted a fresh election, which would be the fourth in less than five years. Even so, Canadians have little idea who might be governing them after Christmas.

Brazil

Fall of an opportunist

Dec 4th 2008 | BRASÍLIA
From The Economist print edition

Justice for a controversial financier

MANY bankers may be worried about whether some fancy product dreamed up during the bubble years might yet lead to a visit from the police. Daniel Dantas, a financier who has profited by operating at the opaque place where business and government meet in Brazil, has been opening the door to find the police outside for much of the past decade. On December 2nd he was convicted of a less sophisticated crime: trying to bribe police officers. Mr Dantas, who has acquired great notoriety in Brazil, was fined 12m reais ($5m) and sentenced to ten years in prison. He has appealed against his conviction.

The charge stems from a police investigation into money laundering known as Operation Satiagraha. (Many investigations have titles that sound like airport thrillers; this one borrows from Mahatma Gandhi's independence slogan meaning "holding onto truth".) It grew out of a previous probe into Mr Dantas's use of Kroll, a security consultancy, to watch over his business partners. During this investigation the police seized a computer from Opportunity, Mr Dantas's investment bank, which contained data from the mid-1990s to 2004 and apparently showed suspicious movements of money.

The judge found that Mr Dantas tried to pay bribes, via two go-betweens, to keep his name out of the Satiagraha investigation. A man fitted with a bugging device was offered $1m in cash, with another $4m to follow, the police say. They claim that Mr Dantas's scam involved money travelling to the Cayman Islands, then via the British Virgin Islands to an account in Ireland, on to Delaware, and then re-entering Brazil as foreign investment. They say that the money-laundering racket's clients included a former mayor of São Paulo, Celso Pitta.

For Mr Dantas the verdict is a steep fall from grace. A man who sleeps little and socialises less, he is a vegetarian and self-made billionaire, a gifted financier who has serially fallen out with his business partners. He once controlled a large telecoms firm, acting for investors who included Citigroup. He says he is the victim of a conspiracy mounted by the government.

It is Mr Dantas's supposed influence in government circles that has added to his notoriety. During the 1990s, when many state-owned businesses were privatised, Mr Dantas positioned himself as the man with the needed expertise and contacts. He enjoyed easy access to the government of President Fernando Henrique Cardoso, including meetings with the president himself. That influence carried through into the government of President Luiz Inácio Lula da Silva. Mr Dantas is alleged to have been one of the funders of a cash-for-votes scheme in Brazil's Congress mounted by leaders of Lula's Workers' Party in 2003-04. Many of those who have had dealings with Mr Dantas insist that these have been legitimate and conducted in good faith. They include Luiz Eduardo Greenhalgh, a lawyer and PT politician, whom he hired as a consultant.

Mr Dantas's lawyers accuse the police of fabricating evidence and the judge of bias. The investigation brought widespread complaints that police wiretapping is out of control. The policeman who led the probe, Protógenes Queiroz, has been suspended. He accuses Mr Dantas of mounting a campaign through the media to discredit him.

Justice in Brazil is marred by clogged courts and interminable appeals. Big trials such as this one are often fought through the press before fizzling out. Tarso Genro, the justice minister, says that the trial of Mr Dantas shows that the institutions of justice are now functioning properly. It is too soon to know if he is right.

Peru

To the barricades

Dec 4th 2008 | LIMA
From The Economist print edition

The politics of non-stop protest

IN NAMING Yehude Simon, a moderate leftist, as his new prime minister in October, President Alan García hoped to give new impetus to his unpopular government. Mr Simon duly presented an ambitious 64-page plan to protect South America's fastest-growing economy from the credit crunch and clean up its corruption-plagued administration. Yet Mr Simon has quickly found that he has to spend most of his time as a firefighter, trying to extinguish a blaze of sometimes violent protests across the country.

The ombudsman's office logged 189 separate social conflicts in October, more than double the number a year ago. New protests erupted almost daily in November. Many concern mines or oil exploration: the protesters either don't want them, or want them to pay more money to local communities. Some concern government infrastructure projects—not in my backyard, or yes in my backyard and on no account in my neighbour's. Others range from strikes to demands for better bus services or the ejection of corrupt officials.

Already Mr Simon has acted as a mediator in a conflict over a hydroelectric plant in Cusco, and dispatched officials to Tacna to deal with a violent protest over mining taxes that saw two people killed and costly damage to property. No sooner had Mr Simon said goodbye to the 20 foreign heads of government who attended the Asia-Pacific Economic Co-operation summit in Lima last month than he had to set up talks over a solid-waste treatment plant in Junín, in the Andes (two opponents were killed in clashes with the police).

Mr García often blames the protests on agitators from small far-left parties, and on Ollanta Humala, a nationalist former army officer whom he narrowly defeated in the presidential election of 2006. Officials have hinted (without proof) that Venezuela's president, Hugo Chávez, funds such groups. Mr Humala in turn accuses the government of trying to distract attention from its own incompetence.

Certainly far-left activists can be found in the bigger disputes. But many of the conflicts are very local in nature, and it is hard to see them as forming part of a concerted attempt to undermine democracy or the market economy. They are getting more violent because people have seen that more can be squeezed from the government by throwing stones or setting fire to police stations than simply by marching

through the streets, says Fernando Rospigliosi, a former interior minister.

Above all the protests dramatise the shortcomings of Peru's political system. According to Ipsos Apoyo, a pollster, 88% of people surveyed said they support the protests as long as they are non-violent. Peruvians know that there is money about: the economy grew by 10% in the year to September. But many also know that they are not receiving much of it. Many of the protests are in the Andes, where big mines may coexist with subsistence farming.

The problem is that Peru's political parties are failing to channel the demands, conflicts and frustrations that rapid economic growth is throwing up. The worry is that as the economy slows along with the world's, blocking roads and throwing stones will become an even more integral part of the Peruvian way of life.

Argentina

Going pinker on the Plata

Dec 4th 2008 | BUENOS AIRES
From The Economist print edition

A new destination for gay tourists

AFP

It takes two men to tango

“FIRST you step, then you change direction. Don’t try to do both at the same time!” implores the instructor at La Marshall, a tango school in a sparsely decorated apartment in the centre of Buenos Aires. But one couple is having trouble taking any steps at all. A paunchy, middle-aged man with a shaved head awkwardly holds his partner—a much younger, thin, dark-skinned man from Australia—while attempting to shepherd him across the floor. Finally, after a few missteps, they decide to switch roles, with the slimmer man taking charge and deftly piloting his partner.

La Marshall, a predominantly same-sex venue, is one of many specialised attractions Buenos Aires offers gay tourists, who have flocked there since Argentina’s 2002 currency devaluation made it one of the world’s most affordable destinations. Tourism officials reckon that at least a fifth of foreign visitors to the city are homosexuals.

In recent years, Buenos Aires has hosted a gay tourism symposium, a gay football tournament, a gay film festival and the first gay cruise in South American waters; it is now home to a gay hotel, a gay bookstore, and a network of stores providing discounts to customers wielding a “gay-friendly Buenos Aires” card. The influx of so-called “pink money” has become a pillar of the city’s economy. Gay tourists, most of whom are affluent and childless, spend on average around $250 a day on top of their hotel bill.

The city’s combination of European architectural elegance and Latin American flair at knock-down prices has attracted tourists of all sexual orientations. But unlike many other Latin American cities, Buenos Aires has established a reputation as being open and tolerant in a region where homophobia remains prevalent. It has been a regional leader in expanding gay rights.

The city council has approved a law authorising same-sex civil unions, and taken other measures that provide for benefits to pass to surviving partners in such unions and to require hospitals to refer to transgender patients by their chosen rather than legal names. And its array of gay-themed or gay-friendly venues comfortably eclipses the offerings in other Latin American capitals. “How many gay discos are there in Ecuador?” asks Alfredo Ferreyra of Buegay, a tour company. “Here, we speak the same language as our clients.”

Some complain that the gay scene in Buenos Aires has become too mainstream. They question how deep the tolerance goes. “I don’t know how people would react if you walk too close together with your partner or hold hands on the street,” says Urs Jenni, a Swiss guest at the Axel, a “heterofriendly” gay hotel where rooms cost up to $500 a night. The only notably gay element in its futuristic lobby is the silhouette of a man’s torso imprinted on a glass barrier.

Others worry that homosexual tourists are no better shielded from the world financial crisis than anyone else. “At this time of year, we had 120 to 150 people a night,” says Roxana Gargano, the organiser of La Marshall. “Now we’re down to around 80. It’s hit us pretty hard.”

Economist.com WORLD ASIA

Terrorism in India

Blame and retribution

Dec 4th 2008 | MUMBAI
From The Economist print edition

India's government wins the world's sympathy and the disgust of its people

Reuters

DAYS after Indian commandos rescued Mumbai, the country's commercial capital, from a 60-hour terrorist ordeal, crowds continue to gather around the century-old Taj Mahal hotel, where the last of the ten gunmen were killed. Hawkers offer the consolations of *kulfi*, a kind of ice-cream, to families who pose for photographs in front of the charred structure. The destruction would have been greater still had a pair of bombs, placed front and rear, not been disarmed.

Two political fuses are still burning. India's government is struggling to contain the damage to its credibility among the citizens it failed to protect. At the same time, American officials, including Condoleezza Rice, the secretary of state, have rushed to Delhi to defuse a potential confrontation between India and Pakistan, where, it now seems, at least some of the terrorists were recruited and trained.

India is quick—sometimes too quick—to suspect Pakistan's hand behind the terrorist attacks it suffers. But it often struggles to prove the link. The Mumbai outrage provides a rare opportunity for India to copper-bottom its case. It is unusual, for example, to capture a terrorist in the act. But one of the two young men who opened fire in Mumbai's Indo-Gothic train terminal is now in hospital, alive and talking. Details from his interrogation have appeared in *The Hindu*, an Indian newspaper, which names him as Mohammad Ajmal Amir Iman, from Faridkot, a village in the Pakistani province of Punjab.

His testimony is only part of the windfall of evidence. The terrorists, in their haste, also left behind a satellite phone in the trawler they hijacked on their way to Mumbai. In the telephone's call log were the numbers of five members of Lashkar-e-Taiba (LET), a notorious terrorist group.

Lashkar-e-Taiba (or "Army of the Pure") began life in the late 1980s attacking India's army in disputed Kashmir, which is split between the two countries. It has since expanded its operations to the rest of India. It is, for example, suspected of bombing Mumbai's commuter trains in 2006, killing more than 200. Mr Iman is reported as saying that its political front organisation, which operates in Pakistan with impunity, recruited him in 2007.

But it is not clear that, even if LET is responsible for the Mumbai attack, Pakistan should be held responsible for its actions (see article). Asif Zardari, Pakistan's president, describes such terrorists as "stateless actors", who victimise Pakistan as much as anywhere else. Only two months ago, a similar group destroyed a swank hotel in Pakistan's capital, killing more than 50 people. A year ago, terrorists also killed Mr Zardari's wife, Benazir Bhutto.

LET was one of several militant groups banned by General Pervez Musharraf, Pakistan's former president, in January 2002 after an attack on India's Parliament the month before. In response, India massed half a million troops near the border, in a terrifying stand-off between nuclear-armed rivals. According to Steve Coll of the *New Yorker*, America's ambassador in India looked into building a nuclear bunker in the embassy.

With hindsight, it is not clear what rattling 500,000 sabres achieved, beyond frightening the world into taking India's grievances seriously. This time, by contrast, India has responded with caution and calculation. It is testing Pakistan's professed willingness to co-operate and demanding that it extradite 20 men wanted for a variety of terrorist outrages, including two alleged LET masterminds of the Mumbai plot. Pakistan has so far demurred.

India's politicians are under tremendous pressure to act forcefully. They can accomplish little by confronting Pakistan directly. But there are indirect ways to bring pressure to bear. Pakistan needs America's money and goodwill; America, in turn, needs India's forbearance. The superpower does not want anything to distract Pakistan from the military campaign it is waging with new vigour against the Taliban and al-Qaeda on the border with Afghanistan. According to Wilson John of the Observer Research Foundation, a think-tank in Delhi, Pakistan has committed four army divisions to this fight. In response to a military threat from India, its forces would be whisked away to the eastern front. This would remove the "anvil" on which America hopes to hammer Taliban and al-Qaeda forces harassing its own troops in Afghanistan.

India's government has received messages of sympathy from abroad, but expressions of frustration from its own people, angered by its inability to protect them. India's navy chief has admitted to a "systemic failure" to police the coasts; the policemen who first confronted the terrorists were unprepared and outgunned; and the commandos who finally prevailed took an age to reach the scene from Delhi.

The failings of India's state machinery are as deep as Mumbai's crowds and as intractable as its traffic. The central government is often at loggerheads with the state governments, which in turn neglect the cities in favour of the rural voters who elect them. Indeed, the more one can ignore the state and its works, the better one feels about the country. This was a privilege reserved for India's more affluent classes and some of its companies, but even they now know the state's shortcomings can hurt them. In a debate held after the attacks, Cyrus Guzder, boss of AFL, a logistics firm, pointed out that corporate India thinks of the government as "something apart". After civic disturbances and communal riots, business prefers to "maintain a dignified silence". But this time, he said, "India Inc got it in the stomach."

We are all Mumbaikars now

The Congress-led government must face this disgusted public in a national election by May. Congress is also awaiting the verdict in six state elections, four of which began polling after the Mumbai attacks had started. In Delhi, run by a capable Congress chief minister, turnout was almost five percentage points higher than in the previous election in 2003. Perhaps voters in India's second-biggest city suddenly feel as unsafe and dissatisfied as do their compatriots in Mumbai.

But the politicians most in danger are not those now facing the ballot box. India's home minister, Shivraj Patil, has already resigned, giving way to Palaniappan Chidambaram, the self-confident and technocratic finance minister. The chief minister of the state of Maharashtra, where Mumbai is located, followed him, having already lost his deputy. He did not help his case by showing up at the Taj hotel shortly after the attacks with his film-star son and a movie director in tow. Kerala's chief minister, a communist, is also in trouble having insulted the family of one dead policeman, after they brusquely turned him away from their home, where he had come to pay his respects in front of the cameras.

The sacking of these figures will not make India much safer. But it will bring some consolation—the political equivalent of eating *kulfi* in front of the Taj.

Economist.com WORLD ASIA

Pakistan and the Mumbai attack

The world's headache

Dec 4th 2008 | LAHORE
From The Economist print edition

Deny, co-operate and cross your fingers

AFP

Not 500,000 at the border this time

THE carnage in Mumbai stunned India and the world, and focused eyes on Pakistan. It is an “international migraine”, said Madeleine Albright a former American secretary of state. “It has nuclear weapons, it has terrorism, extremists, corruption, it’s very poor and it’s in a location that’s really, really important to us.”

This week the senior civil servant in the Indian foreign ministry, Shiv Shankar Menon, hurried to Washington to brief American leaders on a possible Pakistani link to the Mumbai attacks. India wants the world to compel Pakistan to uproot the terrorist groups operating from Pakistani territory, failing which it may be forced to retaliate militarily in some fashion to redeem national honour if not national security.

Later in the week, the secretary of state, Condoleezza Rice, and Admiral Mike Mullen, chairman of the joint chiefs of staff, flew to Delhi and Islamabad, part of America’s effort to restrain both sides from plunging into a wider conflict. India has cleared the Pakistani government of President Asif Zardari of direct involvement in the attacks. But it has demanded the extradition of 20 terrorists based in Pakistan. The list includes Dawood Ibrahim, an underworld don, who masterminded a terrorist onslaught in Mumbai in 1993 and is said to have taken refuge in Karachi. Another name is that of Hafiz Saeed, the chief of the Lashkar-e-Taiba (LET), the jihadist group accused of being behind last week’s attacks. A third is Masood Azhar, sprung from an Indian prison in 1999 by the hijackers of an Indian plane in exchange for its passengers. His Jaish-e-Mohammed group became the main guerrilla outfit fighting Indian security forces in Kashmir.

President Zardari has offered full co-operation to India. He even agreed to send the head of the notorious spy agency, the Inter-Services Intelligence (ISI), Lieutenant-General Ahmad Shuja Pasha, to Delhi. But he backtracked when hawks in the army and press advised against it. He promised to close down any training camps.

Whatever the evidence, however, he is unlikely to hand anyone over to India. This is another way of saying that the writ of his civilian government does not extend to the powerful army—which created these groups in the first place. It is still in no mood to hand their leaders over to India. Nor indeed is it ready to crack down on them. Its hands are full tackling the Taliban and al-Qaeda in the tribal areas of the country abutting Afghanistan. At LET’s yearly moot in its sprawling headquarters in Muridke, 13 miles from Lahore, there are always tens of thousands of supporters and trained combatants thundering *jihad* against India and America.

The Mumbai attacks threaten to wreck the peace process launched in 2003 by India and Pakistan, then under General Pervez Musharraf. President Zardari has enthusiastically pursued the process. Only recently, the two countries agreed to liberalise trade and visas, both long-standing Indian demands. A five-year-old ceasefire across the line of control that divides disputed Kashmir still holds, and neither side has reinforced the border.

But the mood is jittery. Pakistan’s army made it known that in the event of conflict with India, it would move its troops from the tribal areas. This was a warning to America that Pakistan would abandon the war on terror. As if on cue, leaders of the Taliban clucked in support by offering Pakistan’s army a “ceasefire”, and saying they are ready to fight against India.

Mr Zardari has worked the phones, reassuring world leaders of his country’s good faith and asking them to restrain India. But the message delivered to President Zardari by the 58 leaders of an all-party conference held in Islamabad on December 2nd was firm and straightforward: any Indian strike on any target in Pakistan would constitute an act of war.

Japan

Can this place be governed?

Dec 4th 2008 | TOKYO
From The Economist print edition

If you think the economy is bad, just look at the politics

AP

Aso misreads the signals

IF SOME national leaders can be said to be having a good economic crisis, Japan's prime minister since September, Taro Aso, is not among them. The crisis is not only failing to convince the country that he is the steady hand it needs. It is laying bare the ungovernability of the whole political system over which he presides.

Japan is now officially in recession after its longest post-war expansion, and is unlikely to climb out of it until perhaps the middle of next year. Rarely for a developed country, the financial system is without big toxic-debt problems. Rather, the shock has come through a sharp slowdown in exports. Big exporters such as Toyota and Sony and their suppliers are laying off contract and even regular workers. Consumer sentiment has taken a dive. As for business, company profits were a fifth lower in the first half of the financial year from April compared with a year earlier, and the second half will surely be worse.

The credit crunch that Japan had hoped to avoid has arrived. With bond markets all but closed, firms have turned to commercial banks for loans. But a falling stockmarket—the Nikkei 225-share average recently hit a 26-year low—has hurt the banks, which count equity holdings as capital. They are lending little to all but the biggest companies. On December 2nd the Bank of Japan announced that, until April, it would accept pretty much any old corporate debt as collateral from commercial banks for fresh loans. It says it will make ¥3 trillion ($32 billion) of extra funding available, yet questions remain about how much banks will lend on to companies. On December 3rd the finance minister, Shoichi Nakagawa, called in the heads of the biggest banks. But such efforts at moral suasion are unlikely to work.

It is possible to exaggerate the economic woes. Japan's biggest companies are not greatly indebted. No systemic crisis dogs the banking system, though Japan's regional banks are weak. The falling stockmarket has affected few Japanese directly, since for years they have hoarded savings in safe bank accounts (and indeed the freezer). Recently, a rush of younger Japanese have even been opening brokerage accounts. Meanwhile, some politicians in the ruling Liberal Democratic Party (LDP) are lobbying hard for the government to start buying equities. One proposal by a senator, Kotaro Tamura, is for the government to borrow perhaps ¥30 trillion from the biggest banks and hand it to professional money-managers. Such a scheme may turn sentiment around.

The political mess, on the other hand, is hard to exaggerate. Mr Aso's ratings have dropped sharply. The press has made much of off-the-cuff remarks by the prime minister in which he has managed to offend doctors and the elderly, both future targets for government cuts. And it has relished his mispronunciation of certain *kanji* (Chinese characters used in Japanese script) for which schoolchildren would be chided. But at heart Mr Aso, the third LDP man in a row to be elected prime minister by his party rather than the country, has failed to explain quite why he bothered.

His predecessor, Yasuo Fukuda, resigned in order to make way for a sparkier leader to take the country to the polls. But at least three times Mr Aso has postponed what was expected to be a snap election. The delay, he explained, was to deal with the economic crisis, notably by introducing a fresh stimulus package. Yet now Mr Aso says the package will not be introduced until the main session of the Diet (parliament) opens in early January.

Given the obstruction of the Democratic Party of Japan (DPJ), which controls the upper house of the Diet, that makes political sense. But all the public sees is a spat between the ruling coalition's junior partner, New Komeito, which wants a tax rebate as the main part of the stimulus, and fiscal reformists in the LDP

who think households are likelier to save the rebate than spend it, and who want to stop sky-high levels of national debt from rising further. Other LDP pork barons appear to have prevailed in scrapping the commitment to cut spending on public works by 3% a year.

Strains within the LDP are now breaking out into the open, particularly thanks to market liberals, followers of a former prime minister, Junichiro Koizumi, who have recently been sidelined. “Policy groups” have been formed that throw down a challenge to Mr Aso; they might serve as springboards to form a new political party. Yoshimi Watanabe, a former minister of administrative reform and a critic of Mr Aso’s weak political leadership (and of its corollary, strong bureaucratic power), is one of the rebels. Cryptically, he cites his late father, Michio Watanabe, as giving warning against putting party ahead of country. Watanabe senior, a popular LDP figure, once threatened to leave the party as a route to becoming prime minister. The son also refuses to rule out leaving. In the meantime, he calls for a grand coalition government—minus Mr Aso—as a first step towards breaking the political deadlock of two strong chambers controlled by opposing parties.

The DPJ’s bruiser of a leader, Ichiro Ozawa, as unloved as Mr Aso, wants to sow further discord within the LDP. He too has revived the idea of a coalition government, but probably as a means of coaxing more disaffected LDP types into poking their heads above the parapet. For now most LDP politicians appear to think that would be foolhardy. Yet none thinks Mr Aso has total control over the election timetable—April now seems the likeliest month—let alone his fate as leader.

Afghanistan and the Obama administration

No dream team for Karzai

Dec 4th 2008 | KABUL
From The Economist print edition

Cynicism on the streets and a certain nervousness in the presidential palace

BARACK OBAMA has promised to make Afghanistan his foreign-policy priority. But on the streets of Kabul his electoral triumph has been greeted with jaded pessimism. A typical view is that he will make little difference. The president, Hamid Karzai, however, may fear that from his point of view, things may actually get worse.

As a first earnest of a new American resolve perhaps 20,000 extra American soldiers are to arrive in Afghanistan next year: not quite an Iraq-style surge, but much more than a trickle. And the new administration is collecting champions of the Afghan problem. The vice-president-elect, Joe Biden, is a veteran of many visits to the region. The next secretary of state, Hillary Clinton, has called Afghanistan and Pakistan the “forgotten front-line” in the war on terror, and has advocated the appointment of a special envoy to the two countries.

If she gets her way, a probable candidate for the job is her old ally, Richard Holbrooke, a former American ambassador to the UN. He is also the chairman of the New York-based Asia Society and sits on its task-force on Afghanistan with Barnett Rubin, an expert on the country. In October Mr Rubin and Ahmed Rashid, a Pakistan-based author of several books on the region, produced a paper advocating a wider regional approach to the problem—“a grand bargain”, drawing in India, China, Russia and Iran, and tackling the issue of Kashmir as well as that of the Durand Line between Afghanistan and Pakistan.

A dream team of Afghanistan-watchers, however, may be a nightmare for Mr Karzai, who enjoys a hearty, backslapping friendship with the loyal Mr Bush. Mr Obama has been sharply critical of him for not having “gotten out of the bunker” to organise the country in a way that would build confidence. Mr Biden, meanwhile, was so angered by Mr Karzai at their last meeting that he stalked out. Mr Holbrooke has also criticised Mr Karzai. Last year, he challenged him for not arresting a warlord, Rashid Dostum, accused of assaulting a rival with a beer-bottle. He asked how the president could “let the thugs back you down over a murderous warlord”. Mr Holbrooke claims Mr Karzai, facing re-election next September, responded with a shrug. He may be rueing that now.

The Philippine constitution

Charter members

Dec 4th 2008 | MANILA
From The Economist print edition

The pace quickens in an old dance

AP

It takes too many to cha-cha

ALTERING the creaking constitution of the Philippines is known in political circles here as charter change or “cha-cha”. The idea is beguiling, but nobody has yet mastered the steps. Advocates of change are now giving it another try, despite the likelihood that they will bump into their opponents and fall flat on their faces.

The constitution was adopted after the fall of the corrupt dictatorship of Ferdinand Marcos. It is meant to prevent any other president from subverting democracy by stealth, as he did. The problem is that any attempt to change the constitution rouses suspicion that it is the first step towards a slide back to dictatorship.

The timing of the latest attempts has increased this suspicion. Allies of President Gloria Macapagal Arroyo in the House of Representatives have been calling for cha-cha before elections due in 2010, when she finishes the single six-year term allowed her by the constitution. Prominent among these congressmen is Juan Miguel Arroyo, the president’s eldest son.

Advocates of cha-cha say their main aim is to spur the economy by removing constitutional restrictions on foreign investment. Some believe that replacing the presidential system of government with a parliamentary system would reduce endemic official corruption. Others think that a federal system would help quell the Muslim insurgency in the south.

Opponents of cha-cha say the hidden aim is to keep Mrs Arroyo in power after 2010, either by removing the term limit or by instituting a parliamentary system so she can become prime minister. The opposition see another Marcos in the making, even though voters would have the final say. The presidential palace denies that it is behind the cha-cha moves and says Mrs Arroyo intends to leave office. But a palace official said it supports changes that would “significantly boost the country’s chances for growth and development”.

Mrs Arroyo and cha-cha both have less support in the Senate than in the House, not least because a number of senators have presidential ambitions. Some have suggested postponing cha-cha until the 2010 elections, when voters would also elect a constitutional convention, or “con-con”, to consider changes. However, pro-cha-cha members of the House seem to be in a hurry. They wish to assume authority to make whatever changes they really want by convening the present Congress as a constituent assembly, or “con-ass”.

One weakness in the constitution is its vagueness about how this should be done. It says a con-ass would require the approval of three-quarters of Congress. But it does not spell out what that means: 18 of the 24 senators and three-quarters of the 238 members of the House, voting separately; or three-quarters of

the combined Congress voting together, in which case the cha-cha-supporting House would carry the day. Supporters say the constitution allows this. Opponents disagree.

If push comes to shove, the Supreme Court will have to decide. But even the judges might not end the argument. The president is due next year to appoint replacements for seven of the 15 Supreme Court justices. The opposition is bound to cast doubt on the impartiality of anyone she appoints. Then there is wariness that the political confrontation will be taken out onto the streets. Already, left-wing groups have been holding public protests against constitutional change. Supporters and opponents of cha-cha seem fated to end up tripping over each other's feet.

Nigeria

The Muslims and Christians of Jos

Dec 4th 2008 | JOS
From The Economist print edition

The government of Africa's most populous country is slow to stem violence

AP

THE Katako market was still smouldering five days after it was razed to the ground by a mob of Christian youths. The bodies of ten people trapped in the fires that destroyed it had already been taken away and buried. Muslim men kicked up plumes of dust as they shuffled through the ashes of their stalls, which a week earlier had numbered more than 5,000. A dirty young man searched through a pile of blackened onions, picking out those that were not inedibly charred.

A few hundred yards away, students and teachers at an Augustinian monastery were also sorting through wreckage. Their monastery had been attacked on the same day, just 30 minutes later, by a group of Muslim youths. The monk in charge narrowly escaped death when a Molotov cocktail thrown into his tiny room happened to land in the toilet.

The central Nigerian city of Jos is still assessing how much damage was done in the course of three days of destruction that began on November 28th, when what began as protests over local-government elections quickly took on a lethal sectarian character. At least 300 people died, 7,000 were displaced and many businesses, churches and mosques destroyed. A curfew remains in place, with dozens of army and police checkpoints.

Exactly who started the violence is unclear. On the other hand, everyone in Nigeria is familiar with the fierce animosities that exist between the various religious groups in Jos. The town is situated in the so-called "middle belt", between Nigeria's largely Muslim northern half and its predominantly Christian south—and thus has a pretty mixed population. And like other such cities, Jos has a history of ethnic and religious tension that has often boiled over. Similar incidents in 2001 and 2004 left thousands dead.

Many say the federal and state governments could have done more to prevent the killings. Local polls were a probable flashpoint. Elections in Nigeria are often violent and crooked affairs and in Jos there had been no local elections since the country's military rulers gave way to democracy in 1999. Local officials wield enormous power all over Nigeria, often determining who can get college graduation diplomas, business forms and, most contentiously, papers indicating who is an "indigenous citizen" in a particular

area. So the stakes are high. It was the declaration of victory in Jos for the ruling People's Democratic Party, widely perceived as a mainly Christian party, that set off the chain of events that led to the violence. Backers of the defeated All Nigeria People's Party, a mainly Muslim Hausa outfit, protested that the vote had been rigged.

Even after the mayhem began, the authorities' response was slow. In most of the areas with widespread violence, the police did not show up for several hours and in some places did not arrive until the next day. Many residents say that when police and soldiers did eventually arrive, they used excessive force, sometimes shooting indiscriminately into crowds. Army officials have blamed such incidents on impostors dressed in makeshift fatigues.

The president, Umaru Yar'Adua, added to his reputation for underreacting to events by not even going to Jos after the violence, though it is only a three-hour drive from the federal capital, Abuja. Instead, as his envoy, he sent the minister of labour, who arrived after dark and left long before the sun rose the next day.

Forgiveness and reconciliation in Jos will be hard. The balkanisation of this city of 500,000-plus people that began in 2001 with a first round of religious violence will become starker after this latest bloodshed. Muslim businessmen will find it harder to rebuild shops in mainly Christian districts and Christian home owners will struggle to persuade their families to resettle in mainly Muslim areas. Since democracy was restored in 1999, most of northern Nigeria's Muslim states have introduced *sharia* law. That prompted many thousands of Christians to migrate to other states. Increasingly, it seems, Christians and Muslims find it difficult to live alongside each other in a country of 140m-odd people.

At an internet café in one of the few shops still open in Jos, a businessman sitting at a computer doing research had an idea for how to avoid future outbreaks of violence. Every man, woman and child in Nigeria, he said, should own and know how to use a gun. Then events like the recent fighting wouldn't happen, he said. And what was he researching? How to purchase, operate and dismantle an AK-47. He said he already had seven guns at home, including five pump-action shotguns. An AK was next on his wish list.

Zimbabwe

Reaching rock bottom

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From The Economist print edition

When it looks as if things cannot possibly get worse, they do

AP

Mugabe's friends or foes?

FOR the first time in a decade of political and economic meltdown, Zimbabwe's security forces have started to voice their anger. Twice in a week, a few dozen disgruntled soldiers ran amok in the streets of Harare, the capital, after they had been unable to withdraw cash from banks. Some shops were looted and illegal foreign-exchange dealers beaten up before the enraged but unarmed soldiers clashed with the police.

It is too soon to tell if such unrest will resume and spread or if the authorities will contain the soldiers' anger by giving them extra perks while crushing a mutinous few. But it is plain that soldiers, the ultimate guarantor of Robert Mugabe's power, are no longer shielded from inflation, running at hundreds of millions per cent. Thousands have been told to work on farms. Many are deserting. The senior ranks—colonels and upwards—still benefit from access to farms and minerals and other business privileges, and are probably still loyal to Mr Mugabe. But the fate of junior officers is looking grimmer.

Meanwhile, food is running out. Severe shortages will leave more than half the resident population of 8m-9m needing handouts by next month. The few Zimbabweans still formally employed, probably less than a fifth of working-age people, earn only a pittance, their wages—if they get paid at all—long ago squeezed almost into nothing by inflation. Cash-withdrawal limits imposed by the central bank (though relaxed a bit this week) mean that people anyway often get a fraction of their earnings. Public-sector workers are staying away from work en masse. Few teachers now turn up in schools. Dealing on the black market, subsistence, barter and foreign currency sent by friends and relatives abroad are most Zimbabweans' lifelines.

The government has declared a national emergency and appealed for outside help. The latest catastrophe is a cholera epidemic that has hit at least 12,000 people. The World Health Organisation reckons that more than 560 have died, but a local organisation says the toll is already at least twice as high. Most doctors no longer go to work. Harare's main hospitals have virtually ceased to function. The water and sewerage system has broken down in many places, including Harare, where the authorities turned off the taps for a few days in a vain effort to stem the spread of the disease. Sick Zimbabweans are streaming into neighbouring South Africa. The bordering Limpopo river is cholera-contaminated.

Almost three months after a power-sharing deal was signed, there is still little hope that a new government will be in place soon. After more talks in South Africa, the ruling ZANU-PF and the opposition Movement for Democratic Change (MDC) at least agreed on a constitutional amendment providing for a new post of prime minister, to be held by the MDC's leader, Morgan Tsvangirai. Meanwhile, violence against the opposition goes on. This week a leading human-rights campaigner, Jestina Mukoko, was abducted and scores of trade unionists beaten up or arrested.

In any event, it will take at least another month for Parliament to approve and enact the amendment. And several big issues are outstanding, including how ministries and provincial governorships will be shared out, who will be part of a new National Security Council, and what it will do. Negotiations may resume later this month. Meanwhile Mr Mugabe has reappointed Gideon Gono, the central bank governor presiding over the world's highest inflation rate, for five more years.

The 15-country Southern African Development Community (SADC), which has been trying to break the impasse, does not carry much weight with either side. Mr Tsvangirai's party dismissed a recent suggestion from SADC's leaders that the home ministry, which controls the police, be shared with the ruling party, while Mr Mugabe's side would hold on to the army and intelligence service. Thabo Mbeki, the

former South African president mandated as mediator by SADC, reacted with a scathing letter, browbeating Mr Tsvangirai's lot for rejecting the ministry-sharing idea, and accused them of being Western stooges.

Displaying their contempt for SADC when that body makes a decision that goes against Mr Mugabe, the Zimbabwean authorities have poured scorn on a SADC tribunal that recently ruled in favour of 79 white farmers whose land had been targeted for confiscation under Mr Mugabe's land-reform programme. A government official was reported as saying the tribunal was "daydreaming" if it thought the government would comply with the ruling.

Yet SADC is still the only organisation, so far, with a mandate to chivvy both sides into a compromise. When a former American president, Jimmy Carter, along with a former UN secretary-general, Kofi Annan, and Graça Machel, widow of a former Mozambican president and wife of Nelson Mandela, said they would visit Zimbabwe to take stock of the humanitarian disaster, Mr Mugabe's government refused to let them in. Since then, the present UN head, Ban Ki-moon, has managed to have a chat with Mr Mugabe on the fringe of trade talks in Qatar. But unless SADC, whose leaders are anyway divided, declares failure, there is little chance that anyone else, for instance Mr Annan, who managed to sort out a post-election mess in Kenya earlier this year, will step in soon.

Ethiopia and Somalia

A promised withdrawal

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From The Economist print edition

Ethiopia says its troops will be out of Somalia soon. Will they? And then?

IT TOOK Ethiopia two weeks in December 2006 and January 2007 to invade Somalia and crush fighters loyal to the Somali Islamic Courts Union. By contrast, it has taken two years for it to decide to withdraw, leaving the nastiest of the same Islamists in control of much of the country. Officially, Ethiopia is making good on a promise to quit, signed at peace talks in Djibouti last month between Somalia's impotent transitional government and moderate Islamists. It has been reducing its presence for some time. Its intelligence network will remain on the ground, though some of its agents may well be killed by the ascendant jihadists. Several thousand of its troops will be stationed on Ethiopia's side of the border, a day's drive from Mogadishu, Somalia's battered capital.

The Djibouti agreement is supposed to swell Somalia's parliament with moderate Islamists, promising the country the first broadly-based government it has known since the collapse of Siad Barre's regime in 1991, the last time Somalia had anything approaching a government that controlled the whole country. In truth, the Ethiopians are leaving because they are fed up—with the vanity of Somalia's president, Yusuf Abdullahi, and his constant bickering with his prime minister, Nur Hussein; fed up, too, with the listlessness of the African Union (AU) and the UN. Both have failed Somalia almost as entirely as its own leaders.

The AU promised 8,000 troops to control Mogadishu but only 3,000 Ugandan and Burundian peacekeepers pitched up, and then only to protect a few key installations, while other parts of Mogadishu became ever more anarchic. The capital may now be in its worst shape ever. Several hundred thousand of its hungry people are in dangerous, squalid camps outside the city. The UN has tried to deliver aid, but its budget is far too small and the country is far too dangerous for aid workers, many of whom have been kidnapped and killed.

Among Ethiopian officials and soldiers, a sense of quiet relief prevails; it could have been worse. Perhaps 800 Ethiopian soldiers have been killed. No one knows the cost of the operation or how much of it may have been borne by the United States, which egged on Ethiopia to invade. But the Ethiopians' original aims, to shore up Meles Zenawi, their ruthless prime minister, and rout Ethiopia's ethnic-Somali separatists in the country's restive Ogaden region in the east, have largely been realised.

Ethiopia, in any case, reckons that the jihadist fighters' influence in Somalia is weaker than many observers think. It says the reason young men flock to the Shabab (Youth), the former armed wing of the Islamic Courts, wrap their faces in black scarves and kill in the name of Allah, has less to do with al-Qaeda's virulent internet rhetoric than with the $100 monthly salary the Shabab pays. Somalia's government forces have not been paid for months.

Some Ethiopian officials may hope to be begged to stay on with all their costs paid for, but they know that is as unlikely as the UN sending a robust force of peacekeepers. So far, President-elect Obama's team of foreign-policy advisers has given no hint that it will drastically change American policy in the Horn of Africa. Until someone has the courage and the equipment to intervene decisively on a large scale, Somalia will remain the world's murkiest failed state, with ordinary Somalis trapped in their misery.

Iran

An old has-been to the rescue?

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From The Economist print edition

Might a reform-minded former president displace the current one?

AP

The comeback kid?

SEVEN months short of a presidential election, an immaculately robed Shia cleric living in comfortable semi-retirement is making Iranians hold their political breath. When Muhammad Khatami stepped down as Iran's president three years ago, his plans to reform Iran in tatters, he gave every impression that he had left politics for good. Now, his friends attest, he is pondering a comeback.

A rumble of entreaty among a few supporters has become a boisterous campaign to persuade him to run against the incumbent, Mahmoud Ahmadinejad, in next June's poll. According to one ally, Mr Khatami is besieged by supplicants from the provinces. Last month Leyla Hatami, an admired film actress, reduced an audience to tears when she begged him to stand "for the sake of our children and of people who do not want to leave the country."

Why would Mr Khatami think of giving up his charitable foundations and leisurely hobnobs with the world's great for a job that earlier caused him nothing but grief? Elected in 1997 on a pledge to reconcile democracy and Islam, he instead became a byword for thwarted hopes, as the country's unelected conservative establishment, bitterly opposed to any dilution of the Islamic Republic's theocratic character, jailed his supporters and blocked reformist legislation. Many of those Iranians now buttering up Mr Khatami boycotted the presidential election of 2005, when Mr Ahmadinejad beat several reformists.

Mr Khatami's change of heart stems from his anger at what followed. Elected on a platform of social justice, Mr Ahmadinejad has squandered Iran's huge oil revenues on inflationary handouts, cares little for human rights and embarrassed many of his compatriots with his undiplomatic pronouncements, among them his suggestion that Israel should not exist. Many Iranians now remember Mr Khatami's tenure, when the authorities relaxed their grip, just a little, on the ordinary Iranian and the president won plaudits for his charm and moderation, as a golden age.

Mr Khatami may announce his intentions in the coming week or so. But his hesitation is understandable. Should he run and win, he will inherit an economic basket case. Inflation recently cleared 31% a year, 20 points higher than when he left office. Unemployment, informally estimated at 4m in a country of 70m-plus people, is set to rise as government revenues fall with diving oil prices. The conservatives are disenchanted with Mr Ahmadinejad but retain their vivid loathing for his predecessor. Mr Khatami's second presidency, if it comes, will be no easier than his first.

If he stands, the conservatives may unite reluctantly around Mr Ahmadinejad. Privileged with incumbency and a populism that still strikes a chord with poorer Iranians, he remains their best chance. But Mr Khatami's enduring popularity rattles his foes. The results of an internal government poll in big

and medium-sized cities suggest that he could win twice as many votes in these places as Mr Ahmadinejad.

Perhaps the saddest aspect of Mr Khatami’s dilemma is that he is being solicited not because he has new ideas or new methods of advancing old ones, but because he is an elder statesman whom the Council of Guardians, a vetting body, would not dare bar from running. As Iran edges towards achieving the nuclear fuel cycle that would let it become, after Israel, the Middle East’s second atomic power, so the consequences of that ambition, in the form of UN sanctions and the growing isolation of Iranian banks and businesses, are being felt across the economy. Gone are the old slogans about a bright future for Iranians. If Mr Khatami joins the fray, it will not be to elevate Iran but to save it.

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German politics

Merkel counts her blessings

Dec 4th 2008 | STUTTGART
From The Economist print edition

Under fire at home as well as abroad, Angela Merkel fortifies her political base inside the Christian Democrats

Reuters

TO CALL her embattled would be to exaggerate. But Angela Merkel is undeniably under pressure. In the face of wobbly banks and a swooning economy, Germany's chancellor has been found wanting. Other European leaders fume that she has done too little to boost the continent's biggest economy. Business is baying for action. Much of her Christian Democratic Union (CDU) is eager to arm itself for next September's federal election with tax cuts. The CDU's Bavarian sister party, the Christian Social Union (CSU), agrees. But so far Ms Merkel has said no. The latest cover of *Der Spiegel* dubs her "timid Angela".

Yet Ms Merkel emerged from the CDU's annual congress, which ended on December 2nd, in a stronger position. She did not yield immediately: Germany would not engage in a "pointless race to spend billions", she told 1,000-odd delegates in Stuttgart. Nor did she inspire. Her speech was sub-par even by her standards. It took a spirited plea for tax cuts and economic boldness by a liberal CDU parliamentarian, Friedrich Merz, a Merkel rival who is giving up politics, to rouse the hall. Even so almost 95% of the party voted to re-elect her as CDU chairman, more than two years ago. "We delegates put an end to all this public speculation," crowed Volker Kauder, head of the CDU/CSU caucus in the Bundestag. The rebels' ringleaders sheathed their weapons.

In truth, they had little choice. Ms Merkel is the CDU's greatest asset. On a good day 38% of German voters support the party (more than any other). But over half would vote for Ms Merkel if the chancellor were elected directly. The party is counting on a "chancellor bonus" to lift it over several electoral hurdles in 2009. In September it hopes to secure a big enough victory to end its grand coalition with the Social Democratic Party (SPD) and govern with the liberal Free Democrats, a smaller and more congenial partner. But this is a gamble, as the CDU invests its all in a leader who has played down the biggest economic crisis in a generation.

The CDU does not have the anarchic tendencies of the SPD, points out Gerd Langguth of the University of Bonn, who has written a biography of Ms Merkel. Its instinct for discipline has been sharpened by the approach of the "super election year", starting in mid-January with a rerun of last January's election in Hesse. (This became necessary when the SPD failed, after a year of scheming, to form a minority government with the Greens, backed from outside by the ex-communist Left Party.) The premiers of the CDU-ruled states, who are the most formidable potential rivals to Ms Merkel, are "tame", says Mr Langguth. She is "at the height of her power".

In Stuttgart, Ms Merkel prevailed thanks to back-room deals at which she excels. “The chancellor moved a bit,” says Josef Schlarmann, head of the Mittelstands- und Wirtschaftsvereinigung, the CDU’s lobby for small and medium-sized firms. Taxes will not be cut now, but on January 5th the coalition will reconsider whether the economy needs a bigger fiscal boost. She was helped by a surprisingly bright start to the Christmas shopping season and another drop in unemployment.

Yet the deal does not settle the issue. Mr Schlarmann wants a stimulus of tax cuts and investment worth some €75 billion ($95 billion), or 3% of GDP. The CSU’s secretary-general, Karl-Theodor zu Guttenberg, calls his party’s relations with its bigger sibling “creatively and constructively argumentative”. Even as Ms Merkel fends off tax-cutting pressure, the grand coalition is preparing plans to jump-start the economy if it slows further.

The CDU styles itself as the champion of “the middle, Germany’s strength”, a slogan that matches Ms Merkel’s temperate style as much as the part of the political spectrum and social class to which she appeals. It wants to lighten the burden on “productive wage-earners” with a (post-election) tax reform, yet also to cut the budget deficit and to spend more on education and research. Ms Merkel will run on her record as a moderniser of policies on women (her government boosted aid to working mothers), climate change and minorities (less-modern elements in the CDU shocked her in Stuttgart by passing a resolution to recognise German in the constitution as the national language).

To counter the SPD’s argument that it knows best how to curb the excesses of the market, the CDU is burnishing the effigy of Ludwig Erhard, the architect of Germany’s “social-market economy” during the 1950s. Ms Merkel, who nearly lost the 2005 election by campaigning as an avowed economic liberal, now talks more of “order” than “freedom” (while still promising to simplify taxes and labour rules). Her most visionary idea is also her oddest: an “economic United Nations” that would spread German values worldwide.

The CDU will aim much of its passion at the Left Party, whose flirtation with the SPD in Hesse led to the unexpected chance to persuade voters in January to re-elect the CDU’s Roland Koch, now acting state premier. Bashing the Left Party embarrasses the SPD without precluding a revival of the grand coalition after the federal election if need be. Ms Merkel wants the flexibility to form partnerships with any mainstream party but the Left Party, including the Greens. “We can demonise the Left as long as we don’t demonise the Greens and the SPD,” says one senior CDU member of the Bundestag.

Ms Merkel has come far by steering clear of extremes. She hopes to hold this course to next September’s election and beyond. But even she is starting to realise that the skills she honed in fairer weather may not equip her for the coming storm.

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Poland

The tough go politicking

Dec 4th 2008 | WARSAW
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Poland's lightweight government is facing its first serious challenge

Reuters

Tsk, tsk, Mr Tusk

IT IS more an election campaign than a government. Since he won power a year ago, Poland's prime minister, Donald Tusk, has seemed less interested in ruling the country than in preparing for the presidential election in 2010. That is when he hopes to defeat Lech Kaczynski, whose twin brother Jaroslaw was prime minister before Mr Tusk. President Kaczynski delights in vetoing government laws and elbowing Mr Tusk aside at international meetings.

So long as Poland was booming, Mr Tusk's approach may have been sensible enough. With too small a majority in parliament to overturn the president's veto, pushing potentially unpopular reforms has seemed pointless. So it may have appeared wiser to concentrate on highlighting the contrast between the presentable, football-loving Mr Tusk and the gaffe-prone, conspiracy-loving Kaczynskis.

The world's economic crisis is now forcing a change of gear. Poland has not been badly affected so far. But it faces a sharp slowdown in growth, to a (probably optimistic) government forecast rate of 3.7% next year. Polish companies complain that banks, mainly foreign-owned, are raising charges punitively on short-term loans. As credit dries up, job losses are rocketing.

The government launched a new stimulus programme this week, supposedly worth 91 billion zlotys ($31 billion) and featuring loan guarantees and infrastructure spending. The packaging was good, but much of the content was a rehash of old promises. The government's aim seems to be to keep fiscal policy tight so that the central bank can cut interest rates. That may help Poland get into the euro. Mr Tusk surprised many recently when he said this might happen as soon as 2012.

After years when soaring tax revenues disguised the inefficiency of much public spending, budget discipline is both unfamiliar and unwelcome. A plan to raise 12 billion zlotys next year from privatisation looks ambitious in the current climate. This highlights the chances missed by the previous government, which largely halted sales of sprawling state holdings that take in news-stands and furniture factories, as well as some big firms.

To keep spending down, Mr Tusk will rely heavily on his peppery finance minister, Jacek Rostowski, a British-born economics professor. He has steered through a tax reform (conceived by the previous government) that has flattened rates and simplified some of the most frustrating rules (such as the requirement that all records be kept on paper). The government has also tried to reform lax early-retirement rules. Michal Boni, Mr Tusk's economic adviser, says the plan is to make social spending more efficient and cut paperwork that slows construction of roads and so on. But such changes risk both a presidential veto and opposition from vocal trade unions.

It all looks daunting. But Poland’s government is probably the least feeble in eastern Europe. It does not have to cope with either a collapsing property bubble or a highly leveraged financial system. Its biggest flaw is probably going easy on corruption, which the Kaczynskis tackled with wild (but often counterproductive) zeal. The *uklad*—Polish shorthand for the stew of ex-spooks, officials and tycoons who some believe still wield the real power in the land—may be relaxing. But all Poles are facing the economic downturn with increasing nervousness.

Restive Russians

Courageous protesters

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A few welcome hints of protest against the government by ordinary Russians

THERE was neither pathos nor pride in his voice. And, by the standards of Anna Politkovskaya, a Russian investigative journalist whose murder trial is now under way in Moscow, he did nothing extraordinary. But in today's Russia, the courage of Evgeny Kolesov, a middle-aged roofer who was picked as a juror in the trial, has become the best tribute to her life.

Mr Kolesov was at home when he heard on the radio that he and 19 other jurors had asked the judge to conduct the trial behind closed doors. Yet a few hours earlier, he had refused to sign a request to exclude the media that a court secretary gave to the jurors. Shocked by the lie, he contacted Ekho Moskvy, a liberal radio station, and went on air to expose it. What upset him was that he had been made to look a fool and a coward. Mr Kolesov said he could not take part in such a trial, because a small lie leads to a bigger one.

After a few days of tense silence, the court reopened the case to the public. Mr Kolesov was dismissed as a juror. The judge remained in charge, despite a motion from prosecutors to dismiss him. But it was neither the court's attempt to ban the media nor the lie about the jurors' wishes that really stunned ordinary Russians. It was that a Moscow roofer had bothered to stand up and object. *Novaya Gazeta*, the newspaper for which Ms Politkovskaya worked, said that Mr Kolesov had revealed a different society from "shapeless, inert, embittered and voluntarily obedient people", which until recently was hidden from sight. That a simple act of decency has become so heroic speaks volumes about the present state of Russia.

Some say that a baleful legacy from Vladimir Putin's presidency was that it played to the worst instincts of the Russian people, fanning nationalism and curbing much of the civil activism and dignity which was so evident in the early 1990s. Defenders of human rights, for instance, have always had much to do in Russia, but they have rarely been backed by the wider public. But as people get restive, this may change. On November 29th some 200 residents of a Moscow suburb took to the streets. Their protest came after the beating up of a local journalist who had written about corrupt officials. The protesters, who were photographed by plain-clothed security men, did not cover their faces.

Many who did not care about politics a year ago are now paying more attention. A few weeks ago this correspondent had a call from a librarian in Tver, a town north of Moscow. Interviewed a year ago, during the parliamentary election, she had refused to talk about politics which, as she explained, had nothing to do with her and over which she had no influence. Now she wanted to complain about the lawlessness of a local election. She and others employed by the state had been told that they would lose their jobs or bonuses if they did not turn up and vote. "I was humiliated: it has never been like this. I did not vote," she said.

Perhaps the most symbolic act of revolt has occurred on a road that exudes Kremlin power. The road, which connects the Kremlin to the government's dachas, comes to a standstill every day when Mr Putin and President Dmitry Medvedev drive to work. Hundreds of cars with flashing blue lights whisk a high caste of bureaucrats and security men along a specially reserved lane, pushing aside ordinary Muscovites. A few days ago drivers' patience snapped and they took over the special lane. Unable to pull over hundreds of cars, the astonished traffic police simply waved all of them through.

The drivers may not change the habits of Russia's powerful bureaucracy, just as the opening of the Politkovskaya trial to the public is unlikely to uncover the identity of the politician who, according to the prosecution, ordered her killing. But these events do suggest that, for all the government's best efforts, there are signs of civil vitality still in Russia. The economic crisis that is hitting the country could trigger more protests. The risk is that it may make the Kremlin even more repressive.

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Spain's property crash

Builders' nightmare

Dec 4th 2008 | MADRID
From The Economist print edition

The housing bust gets ever bigger

AP

The biggest risk would be to buy

SPANIARDS are not used to housing busts. Since property seemed for so long to be a one-way bet, some still find it hard to grasp that prices can ever fall. Recently 2,000 people spent a chilly night sleeping out to sign up for “cheap” new homes due to be built in the Madrid dormitory town of Fuenlabrada. They could have found lower prices on the internet.

The market is dropping fast. Property fairs tout discounts of as much as 60% on new-built homes, or even “buy one, get one free” offers. “All the statistics show a fall,” concedes the housing minister, Beatriz Corredor. Yet pinning down just how big a fall is tricky. Tax-shy Spaniards do not always declare the true selling prices. The government’s main index, based on valuers’ estimates, shows a 1.3% nominal fall in the third quarter. Most think the true figure is far bigger. The IESE business school talks of prices of existing homes falling by 8%.

Private sellers cannot believe that their homes are losing value, according to Fernando Encinar, communications director at idealista.com, a property website. But developers know the game is up. Some deals are being struck at 20% below advertised prices, he says, a fact few developers are keen to broadcast. They do not want people writing off deposits on half-built homes and shopping around for something cheaper.

The huge number of homes still being built makes the outlook even bleaker. Cranes dot the skyline of Madrid’s outer suburbs, promising more pain. Spain has been churning out new homes at near-record rates. Figures for new but unsold homes vary from half a million to over 900,000; the number is rising. In July a five-year record 70,691 new homes were finished. Over the first eight months of 2008 429,711 new homes joined the glut.

Those reassured by the health of Spain’s banks have tended to look only at household mortgages. But these are not where the real problem lies. Loan-to-value ratios tend to be safely below 80%. And Spanish mortgages cannot be cancelled by dropping the house keys at the bank: security is provided by all of a borrower’s assets—and sometimes those of relatives as well. It is no surprise that most Spaniards do their utmost not to default.

The real worry for banks concerns their loans to builders and developers. More than 40% of property loans go to them, not to householders. And the numbers considered “doubtful” by the Bank of Spain rose by 60% in the second quarter, to reach 2% of all such loans. They now account for more bad loans than do household mortgages. Worse is to come. “Let no one hope for a price fall of 30-40% because, before that, I’ll be giving it all to the bank,” the head of the Spanish developers’ association, Guillermo Chicote, said

recently.

Many construction groups are on their knees. The fifth-largest, Habitat, has joined the giant Martinsa-Fadesa among those filing for administration. Metrovacesa and Colonial have fallen partly into their creditors' hands. Another indebted builder, Sacyr Vallehermoso, has just sold its toll-road arm and is in negotiation to sell its holding in Repsol YPF, Spain's big oil company, possibly to Russia's Lukoil.

Plenty of new homes are now being finished, but few are being started. Those Madrid cranes will soon disappear. Construction has until recently accounted for twice as big a share of GDP in Spain as in other big European countries. It is now shrinking fast—and shedding workers.

The prime minister, José Luis Rodríguez Zapatero, has his eye fixed on unemployment, which rose by over 40% on a year ago to hit almost 3m in November. Spain has Europe's biggest unemployment crisis. The government's latest €11 billion emergency boost is meant to create 300,000 more jobs. But it will not push up property prices. For years Spaniards have grumbled about exorbitant house prices. The market is sorting that one out, at least.

France's Clearstream affair

Villepin v Sarkozy

Dec 4th 2008 | PARIS
From The Economist print edition

A former rival accuses the president of interfering in the judicial process

POLITICAL rivalry, international arms-dealing, industrial intrigue, spookery, financial kickbacks: the Clearstream affair has all the appeal of a Hollywood blockbuster. Every twist in the four-year-old judicial drama has gripped France. One of its protagonists, Dominique de Villepin, a former prime minister, has been ordered to be tried in a criminal court. This week he accused his arch-rival, President Nicolas Sarkozy, of meddling in the judicial process.

The story began with a list, leaked to a judge in 2004, that named people said to hold secret bank accounts at the Clearstream financial clearing-house in Luxembourg. The accounts were supposedly linked to kickbacks on the sale of French frigates to Taiwan in 1991. One person named was Mr Sarkozy, then finance minister under President Jacques Chirac. (Mr de Villepin was interior minister.) But the list of names was later ruled by the judge to be a fake, and a new case was opened into “false accusations”. Mr Sarkozy became a civil plaintiff in this case.

The investigation has fingered Imad Lahoud and Jean-Louis Gergorin, two former executives at the European Aeronautic Defence and Space company (EADS), who are suspected of concocting the list. A retired spy, General Philippe Rondot, has been called as a witness, and his computer and notebooks seized by investigating judges. The general said it was Mr de Villepin who, at Mr Chirac’s request, asked him to investigate the authenticity of the list.

Mr Chirac’s lawyers have argued that the constitution gives him judicial immunity for acts carried out as president. That leaves Mr de Villepin as the highest-profile figure tarred by the affair. When he was charged in July 2007, he was forbidden from contacting Mr Chirac. At first, judges decided that there was not enough evidence against him to bring the case to court. But after further investigation, they have now ordered Mr de Villepin to stand trial for “complicity in false accusation, complicity in using forgeries, receipt of stolen property and breach of trust”. He could face up to five years’ imprisonment.

Mr de Villepin has struck back. He thinks that he has been unfairly singled out because of the long-standing rivalry between himself and Mr Sarkozy, going back to the days when they were vying to be Mr Chirac’s heir-apparent. This week he insisted that his “innocence in this affair is total”, and complained of “a media lynching”. He told *Le Parisien*, a newspaper, that “I fear that Nicolas Sarkozy is in large part blinded by passion.”

He has also accused Mr Sarkozy of interfering in the judicial process by postponing for just 17 days, by presidential decree, the promotion to the appeal court in Montpellier of an investigative judge, Henri Pons. During his extended mandate, Mr Pons was one of the judges who ordered Mr de Villepin to stand trial. “It is not acceptable that in this country there is such a confusion between the private interests of the party claiming damages, and the public responsibility of the president of the republic,” said Mr de Villepin. He has complained to the Conseil d’État, France’s highest administrative court.

The case is unlikely to be heard until 2010. Mr de Villepin insists that he merely wants the truth to come out. Few French politicians end up behind bars. Bernard Tapie, a minister under François Mitterrand, spent nearly six months in prison in a football-match-rigging case. Earlier this year, Charles Pasqua, an interior minister under Mr Chirac, was given a suspended prison sentence for illegal party-financing. So was Alain Juppé, a former prime minister, in 2004. France’s best-known case concerned Roland Dumas, a former foreign minister who was sentenced to six months in prison for accepting illegal gifts—including Greek statuettes and designer shoes—in the Elf corruption case in 2001. But his conviction was overturned on appeal.

Venice in peril

Flood warnings

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The high water in Venice confirms the city's fragility

Reuters

Alta aquaplaning in St Mark's Square

HAD the sirocco (the south wind that brings Venice its worst floods) not unexpectedly dropped and shifted direction on December 1st, it would have been much worse. As it was, Europe's most fragile city this week suffered its severest incursion from the sea in 22 years. The water peaked at 156 centimetres above normal—the fourth-highest level since 1872. It brought the city's transport system to a halt and forced Venetians to put on thigh-high waders to move about.

The mayor, Massimo Cacciari, shrugged off the latest *acqua alta*. Nobody was hurt, he said, and none of the city's glorious buildings had collapsed (though how much damage was done will not be clear until a survey starting on December 15th is completed). Mr Cacciari, a left-winger, refused to ask Silvio Berlusconi's right-wing government to declare a state of emergency.

For many, especially those who pour cash into Venice preservation charities, such phlegmatism sounded a jarring note. It is 42 years since the great Venice flood of November 1966 demonstrated shockingly the city's vulnerability. Yet today it appears no safer. A scientific conference in Cambridge in Britain five years ago concluded that Venice needed a barrier to protect it from flooding. But many Italian greens are against the idea, saying that it may upset the lagoon's delicate eco-system. Mr Cacciari, like many Venetians, is sceptical.

In 2003 work nevertheless began on the MOSE project, which includes the installation of 78 plates that can be raised from the sea floor. Italy's infrastructure minister, Altero Matteoli, has pledged to set aside €800m ($1 billion) to continue work next year. But at least €1.2 billion more will be needed and in today's climate the money may be hard to find. Mr Matteoli promised that MOSE would come into operation in 2012, but added "at the latest in 2013".

Charlemagne

Grumpy Uncle Vaclav

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From The Economist print edition

It is wrong of other European Union countries to dump on the Czechs' EU presidency

Illustration by Peter Schrank

A LUNCH for European Union ambassadors to the Czech Republic, hosted by France's man in Prague, sounds like a most agreeable affair: clever company and tasty food, in handsome surroundings. Yet by all accounts, a recent such lunch proved very awkward, thanks to its guest of honour: the country's Eurosceptic president, Vaclav Klaus. He was politely asked about EU policies and how they might be handled when the Czechs take over the rotating EU presidency on January 1st. Each time the president growled that he was against the EU, so had no reason to answer such questions. The Czech presidency was an insignificant event, he added, because the EU is dominated by its big founding nations. Mr Klaus turned to the envoy from Slovenia, a former Yugoslav republic that was the first ex-communist newcomer to hold the rotating presidency, earlier this year. Everybody knows the Slovene presidency was a charade, he ventured. It was scripted by big countries like France or Germany.

Technically, this lunch did not matter much. Mr Klaus is not only the Czech president but also founding father of the ruling centre-right party, the Civic Democrats (known by their Czech initials as ODS). But as folk in Prague are at pains to point out, it is not his job to run foreign policy; he will have only a small role in the EU presidency (perhaps hosting a few summits with third countries). Even so, the lunch demonstrated three unhelpful facts that threaten to overshadow the Czechs' six months in the chair.

The first is that Mr Klaus is unusually rude for a head of state. The second is that he is not stupid: he is right that the bigger countries of old Europe are in a bullying mood. Backers of the EU's (stalled) Lisbon treaty like to claim that it is vital to restore "efficient" decision-making to Europe, after recent waves of enlargement to the east. In truth the treaty is to a significant extent a naked power grab by big countries, sweetened by new powers for the European Parliament. Two new posts proposed by Lisbon—a permanent European Council president and a foreign-policy chief—would surely come under the sway of the big beasts.

A mood of impatience with the enlarged Europe helps to explain a mysterious plan, briefly floated by senior French officials, for France's president, Nicolas Sarkozy, to continue hosting European summits after his country's shot at the EU presidency finishes on December 31st. Such summits, it was briefed in Paris, would be reserved for heads of government from the inner core of countries that are in the single currency, the euro (possibly with Britain added). The Czechs, of course, are not: a detail that would allow Mr Sarkozy to continue running things in 2009, in case Czech leaders "sabotage" the EU during their presidency, as an official from the Elysée Palace tactfully put it to French reporters.

This leads directly to the third unhelpful fact about Mr Klaus. He may not have formal powers to muck up the Czech presidency. But he has already done it great harm by handing ammunition to EU countries that would love to shunt the Czechs to one side (read some European newspapers, and you would think Mr Klaus was the only political leader in Prague). That would be a shame, because the Czechs have some good ideas.

For a start, they are fervent free-marketeers. Their prime minister, Mirek Topolanek, calls the common agricultural policy “nonsensical”, and wants the EU to forge a “common energy policy” that would link internal grids and reduce European energy dependence on Russia. Mr Topolanek worries that EU diplomacy towards Russia has been “deformed” by some countries’ business interests. A firm Atlanticist, he has three large flags on display in his office: the Czech flag, the EU one and the blue-and-white standard of NATO. His government supports the installation of a radar base outside Prague for an American anti-missile shield that Russia has condemned (the Czech parliament is less keen). His EU presidency plans include a long-overdue push for Europe to pay much more attention to its eastern neighbours, such as Ukraine.

Mr Klaus has muddled the Czech message. An admirer of Vladimir Putin, he criticised his own government’s support for Georgia after the August war in the Caucasus. He has spearheaded opposition to the Lisbon treaty, telling the constitutional court that it threatened Czech sovereignty. The court disagreed, but it will still take time to win round some of Mr Klaus’s ODS allies in the Czech senate. As a result, it seems certain that Lisbon will not be ratified by the Czechs before their EU presidency starts. Whatever you think of the treaty, this will undermine the Czech Republic’s credibility when it chairs discussions of Europe’s future. Ratification may be achieved “in the first quarter of 2009”, suggests Mr Topolanek. Even then, Mr Klaus says he will not sign the treaty unless this summer’s Irish rejection of Lisbon is reversed. During a state visit to Ireland last month, the Czech president dined with local anti-Lisbon campaigners, praising them for being “dissidents” against the EU.

A castling manoeuvre

Inevitably, domestic politics play a part in all these machinations. Mr Klaus wants Mr Topolanek to be toppled as ODS leader during a party congress starting on December 5th. The latest signs are that Mr Topolanek is safe, for a year at least. But human frailties play a big role too. Inside government circles in Prague, the mood is oddly reminiscent of a family preparing for a wedding that is opposed by an outspoken patriarch. Some hope that the grumpy uncle will put family first, and stay quiet. Others note anxiously that his anger is sincere. Combined with the patriarch’s love of attention, the fear is of a scene in front of the guests.

Mr Klaus would doubtless reject any such homely analogy. He sees himself as a statesman defending Czech interests and the wider cause of liberalism. But with an EU presidency looming, his outspoken rudeness looks more like a gift to European enemies of liberalism. That is neither agreeable nor clever.

Correction: Our cover of November 8th

Dec 4th 2008
From The Economist print edition

On the cover-wrap of our November 8th issue we used an image of a bull with a broken horn to advertise our special report on Spain. Grupo Osborne has asked that we clarify that they own trademark rights in the bull (with horn intact), and that no reference to the group was intended.

Police raid on Parliament

Strangers in the house

Dec 4th 2008
From The Economist print edition

Officers enter Parliament to root out a mole-groomer. Should this make Britons grateful or fearful?

ILLEGAL immigrants guarding the prime minister's car; secret predictions of a looming crime-wave; security guards without the proper paperwork. In recent years a series of embarrassing leaks from within the Home Office has fallen into the hands of the Conservative Party, causing anxiety within the government and great glee among newspapermen. Now, it seems, the leaker has been caught, and the scoops may dry up. But the plugging of the leak has turned into an even bigger story.

It began with a knock on the door of Damian Green, the Conservative spokesman on immigration, on November 27th. Mr Green was arrested, held for nine hours, and had his home and offices subjected to a good rummaging by police. The civil-servant mole, 26-year-old Christopher Galley, had been arrested a week earlier and apparently confessed to passing information to Mr Green. Police are still investigating: more leaks, more moles and more recipients may yet be outed.

They are unlikely to be treated as roughly as Mr Green, given the outcry in Parliament over the affair. Receiving and publicising leaks is part of an MP's job, opposition parties have pointed out. Many within Labour are angry too. Harriet Harman, the deputy prime minister (who was herself reportedly accused of leaking court documents as a junior MP), said she was "very concerned" at Mr Green's treatment. Some might have enjoyed the sight of an MP being taken down a peg or two, but many more felt a Zimbabwean chill at watching security forces march into Parliament to raid the offices of the opposition.

What exactly did the police do wrong? MPs' immunity from prosecution applies only to what happens in the chamber of the Commons, exempting them from being sued for libel for what is said there, for example. Elected crooks such as Jonathan Aitken, a perjurious Tory minister, have been convicted in the past. So have moles. Receiving and publicising a leak would be against the law if the information fell under the Official Secrets Act, but the examples cited so far do not. Instead, Mr Green is accused of "grooming" Mr Galley to spill secrets, a suggestion he denies beyond buying the young man a drink. A similar case against a newspaper reporter, Sally Murrer, was thrown out by a judge on November 28th. Police insist Mr Galley's job put him near highly sensitive material, but as *The Economist* went to press had produced no proof that he disclosed any.

The apparent flimsiness of the case against Mr Green has led some to suspect that the operation is politically motivated. Jacqui Smith, the home secretary, claims not to have been told about Mr Green's arrest; her top civil servant, Sir David Normington, seems to have kept her prudently out of the loop. The Tories are not buying that though—especially after Phil Woolas, an accident-prone Home Office minister, compared the investigation to last year's "cash-for-honours" inquiry into the Labour Party, leaving the

faint impression that he thought it fair to even the score.

That aside, there could be a misguided desire for a wonky even-handedness among commanders in the Met, who are struggling with an ever-more political role. Another legacy of cash-for-honours may be less willingness among the police to co-operate with prosecutors. That adventure was called to a halt by the Crown Prosecution Service (CPS), for lack of evidence. It appears that officers had only limited discussions with the CPS before arresting Mr Green, perhaps wary of the same thing happening again. Some prosecutors think that more consultation would have stopped the police from going overboard.

Cui bono?

The Metropolitan Police has now ordered an inquiry into its own investigation, which will report within two weeks. Several main players are already vulnerable. Ms Smith's stock is low thanks to the bitter, lost battle to extend the pre-charge detention of suspected terrorists and a series of cock-ups of the sort that no home secretary seems able to prevent. Her wafer-thin constituency majority deprives her of allies, since nobody expects her to be around in the next parliament to repay favours.

House of Commons officials too have come under fire for allowing the police to raid Mr Green's parliamentary office without a warrant. Officers broke the law if, as it seems, they failed to point out that consent could be withheld and a warrant demanded. But neither the new serjeant at arms, Jill Pay, who gave permission, nor the speaker, Michael Martin, whom she telephoned about it, thought to ask. Mr Martin, a Labour MP whom many Tories would love to see the back of, has promised that no such warrantless incursion will incur again, and promised a review by seven wise MPs of this breach. He will be in the firing line when its findings are debated.

For now, though, the government is on the offensive, claiming that the affair is a manufactured fuss to hide Tory wrongdoing. That is a gamble. But for some of the police involved in the investigation, there is even more riding on its outcome. The top job at the Met is now vacant (see article) and several of those steering the current inquiry are believed to have applied to fill it. Sir Paul Stephenson, the acting commissioner, and Bob Quick, the officer who ordered Mr Green's arrest, are among them, and may pull out of the race if the inquiry finds them at fault. The report that could seal their fate is being written by Ian Johnston, the chief constable of the British Transport Police, who was at one time considering running for the job himself.

Curiouser still, the first selection panel will be chaired by Sir David, who called for the inquiry in the first place, and the final say in who gets the job will go to Ms Smith. This may not have occurred to Met commanders when weighing up whether to arrest an opposition MP. But if it did, the calculation could end up backfiring.

Vacancy at the Met

Who's for the hot seat?

Dec 4th 2008
From The Economist print edition

London's police force needs a new boss

Illustration by Claudio Munoz

THE Commissioner of Police of the Metropolis, as London's top bobby is grandly known, has a beat that goes beyond the capital. His £3.5 billion ($5.2 billion) budget and 50,000 staff are devoted partly to national matters: mainly countering terrorism, but also specialist jobs such as fighting fraud and protecting VIPs. Four times bigger than the next largest force, the Met matters to everyone.

Following the early exit of Sir Ian Blair, its most recent, embattled occupant, the £253,000-a-year post is now in play. Applications for the job closed at noon on December 1st. The candidates, whose names are secret for now, will be whittled down by a panel chaired by Sir David Normington, the senior civil servant at the Home Office, and then interviewed by members of the Met's watchdog, the Metropolitan Police Authority, before the home secretary, Jacqui Smith, chooses one. To avoid volcanic rows she must pick someone who meets the approval of Boris Johnson, the Conservative mayor of London, who forced the exit of Sir Ian in the first place.

Up to a dozen chequered caps may have been thrown into the ring. Sir Paul Stephenson, a steady hand who is acting head of the Met, became odds-on favourite after winning praise from the mayor's office. But last week's rumpus over the heavy-handed arrest of an opposition MP, Damian Green, has changed everything, perhaps scotching Sir Paul's chances along with those of Bob Quick, the Met officer who directed the controversial operation. Ian Johnston, the head of the British Transport Police, is investigating the incident—and has considered applying for the job too. Ken Jones, president of the Association of Chief Police Officers and another likely candidate, offered conspicuous support for the operation, perhaps unwisely, just as applications were being handed in.

Leading the pack now is Sir Hugh Orde, Northern Ireland's chief policeman, who holds counter-terrorism experience as his trump card. Keeping the peace in Belfast is good preparation for the delicate diplomacy required to keep Ms Smith, Mr Johnson and the media on side. Sir Hugh also impresses policy-minded folk, musing in May, for example, that the government should consider talking to al-Qaeda as he had done to the IRA. (Having a mind of his own may count against him in the eyes of his political masters, of course.) Bernard Hogan-Howe and Sir Paul Scott-Lee, successful chief constables of Merseyside and the West Midlands respectively, are probably Sir Hugh's closest rivals.

Any number of wild cards could yet win the game. Ms Smith may decide to break a 179-year chain of white men by picking Julie Spence, Cambridgeshire's chief constable, Jane Stichbury, an inspector of constabulary, or Mike Fuller, the black chief constable of Kent. Ms Stichbury, especially, is rated highly by colleagues. Finally, all candidates may be in with a second chance: if Sir Paul misses out on the top job he is likely to quit, leaving the deputy's post open.

DNA and human rights

Throw it out

Dec 4th 2008
From The Economist print edition

A court decision limits the scope of police DNA databases

HOLDING DNA samples and fingerprints of suspects who are later acquitted, or have the charges against them dropped, violates their right to privacy, the European Court of Human Rights ruled unanimously on December 4th. Its decision, which is binding on all 46 members of the Council of Europe, will have an immediate impact on around 850,000 innocent people whose genetic profiles are stored on the police DNA database in England and Wales.

The case concerned two British citizens, both from Sheffield—Michael Marper and a man known simply as S. In January 2001, when S was 11, he was arrested and charged with attempted robbery, but acquitted six months later. In March that same year Mr Marper was arrested on a charge of harassing his partner; the case was then dropped after a reconciliation four months later. Both men had their fingerprints and DNA samples taken on arrest. After being cleared, each asked for his data to be destroyed, but was told that this was impossible.

With 5.3m profiles, representing 9% of the population, Britain's DNA database is believed to be the biggest in the world; few other countries hold profiles of more than 2% of their citizens. In England and Wales (not Scotland) the police take DNA samples from anyone who is arrested for a "recordable" offence—usually one carrying a custodial sentence, but including peccadillos such as begging or being drunk and disorderly. (This happened to Damian Green, the Tory immigration spokesman, when he was arrested on November 27th in connection with Home Office leaks.) The data is then stored for the rest of the suspect's life, even if he is acquitted or never charged. No other democracy does this.

In Scotland if a suspect is acquitted his DNA profile usually has to be destroyed. Swedish authorities may retain only the profiles of criminals who have spent more than two years in prison. In Norway and Germany a court order is required to store a DNA sample permanently. Only the DNA of convicted criminals can usually be kept in America. Since 2005 the FBI has been allowed to take DNA samples on arrest but these can be expunged, on request, if no charges are brought or the suspect is acquitted. Of some 40 states that have their own databases, only California allows permanent storage of DNA profiles of those who are charged but then cleared.

Besides the innocent adults, included in Britain's DNA database are the profiles of some 1m people who were under 18 when they were arrested. Many were never convicted, but all have been tagged for life as having got on the wrong side of the law. Mr Marper and S argued that the system is both discriminatory and an infringement of their privacy rights. They were entitled to be treated in the same way as the rest of the unconvicted population, they said. In 2004 the House of Lords rejected their claim. The European Court ruling upheld their privacy complaint and argued that it was not necessary to address separately the question of discrimination.

Thanks to the use of DNA in nabbing kidnappers, rapists and the like, its collection from criminal suspects is popular in Britain. Yet few, other than the police, favour the permanent storage of anyone who has been arrested. Some argue that the best solution is simply to store everyone's DNA. But that would be expensive and prone to hacking and leaking, risking another breach of privacy.

Interest rates

Scissors and stone

Dec 4th 2008
From The Economist print edition

The banking crisis is blunting the effect of rate cuts

THE Bank of England, established in 1694, has never set the official interest rate below 2%. On December 4th it tumbled to that historic floor, last seen in 1951, as the bank cut the base rate by a full percentage point, from 3% to 2%.

The step had been widely expected in the City, but it still marked another extraordinary reduction in the official interest rate, which as recently as early October stood at 5%. Yet though the decision brings hope it also conveys fear. The Bank of England is doing its utmost to cushion the economy from a bumpy downturn. But the scale of its action also shows how worried it is about a pernicious recession stemming from a traumatised banking system.

If there were any doubts that a further big rate cut was on the way, they had been dispelled by the time the central bank's monetary-policy committee met this week. The preceding days had brought a string of dispiriting news about the speed with which the British economy is sinking into recession.

A report on manufacturing started the week on a downbeat note. An index based on purchasing managers' views about new orders, output, employment and the like fell in November to its lowest level since it was started in 1992.

Subsequent reports for other sectors made clear that the pain is widely shared. Construction is in as poor shape as manufacturing. And the big private services sector is also in dire straits: purchasing managers reported a record contraction in activity, new business and employment in November. Taking all three surveys together, they point to GDP declining by 0.8% or 0.9% in the fourth quarter, an even bigger contraction than the 0.5% fall in the third, according to Vicky Redwood of Capital Economics, a consultancy.

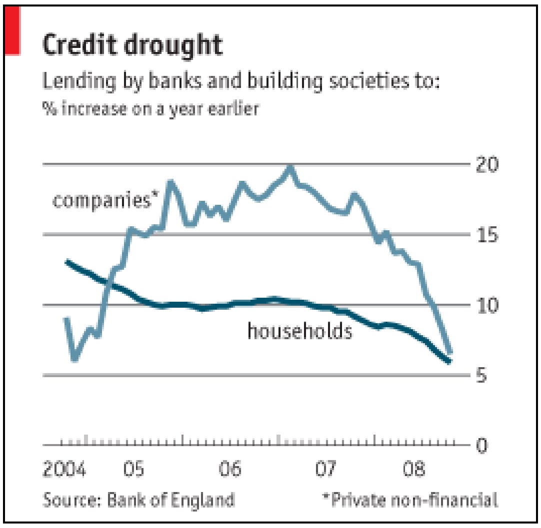
As the Bank of England has tugged down the base rate, attention has naturally focused on the extent to which its efforts are getting through to the rates actually charged to borrowers. Figures released this week—for October when the bank had cut the base rate from 5% to 4.5%—showed that people seemed to be doing better than firms. The average rate on new mortgages to households fell from 6.09% in September to 5.89%, whereas it rose for new loans to private non-financial companies from 6.51% to 6.71%.

Yet the most disquieting news was about the amount of credit being extended rather than its cost. Although the broad measure of lending appears to be bowling along, it is distorted by the activities of specialist financial intermediaries. Strip these out and a stark picture emerges: credit growth is subsiding.

Lending to individuals and companies has stalled since the summer. This has pushed down annual credit growth to households from over 8% in the first few months of 2008 to 5.9% in October. The slowdown in lending to companies has been even starker, falling to 6.5% in October; as recently as June it was growing at double the rate (see chart). This in turn is contributing to a sharp cutback in corporate liquidity: deposits held by firms fell by 5.2% in the year to October.

The reason is clear: overextended banks fearing big loan losses are trying to shrink their balance-sheets as fast as possible. That may make sense for any one of them but if all banks do it, the contraction will make things worse by tipping good as well as bad companies over the edge, so causing more losses and precipitating another downward spiral. This explains why Mervyn

King, the governor of the Bank of England, has said it is so urgent that normal bank lending be resumed.



The monetary-policy committee has now not so much cut as shorn the base rate. That will aid the economy as at least some of the reduction is passed through to lower borrowing costs. Households will also be helped by the temporary fiscal boost that started on December 1st, when the main value-added tax on goods and services came down from 17.5% to 15%. But if the economy is to escape a really serious recession, the banks must keep credit flowing to businesses. Otherwise stone will blunt scissors.

Community banking

Filling the gap

Dec 4th 2008
From The Economist print edition

Between high street and skid row there is work to be done

CONSUMERS and small traders fed up with their high-street banks tend to despise the humble credit unions—financial clubs owned and run by their members—as an alternative, dismissing them as little more than a leg-up for the very poor. Many unions were started in people's homes, and a decade ago a quarter of them were still run from there.

But times are changing. The credit crunch has vividly exposed the gap in the financial infrastructure between the dominant high-street banks and bottom-feeding pawnbrokers and loan sharks. The government has tried to address the problem by asking big banks—especially those such as Royal Bank of Scotland (RBS), Lloyds TSB and HBOS in which it has (or will soon have) a hefty shareholding—to be nicer to small businesses and mortgage borrowers. On December 3rd Gordon Brown snatched headlines when he announced that eight big lenders had agreed to let struggling borrowers (those made redundant, for instance) defer part of their mortgage payments for up to two years, thus reducing the likelihood of repossession. The Treasury will underwrite the risk.

Some local communities, concerned that their citizens and small businesses are falling between the cracks, are not prepared to rely on banks changing their spots. They are moving to provide financial services of their own. On November 26th Essex County Council discussed plans to create a "Bank of Essex", no less, which would co-finance small companies alongside the European Investment Bank. "Banks don't seem to be supporting some very viable small businesses," says Lord Hanningfield, leader of the council.

In Surrey various regional bodies are plotting to launch Surrey Save, a credit union, with the help of Gareth Evans, who has advised on recent start-ups in various London boroughs. One of them, H&F (Hammersmith & Fulham) Credit Union, opened its doors on November 28th.

In many other countries there is a network of local banks, such as the savings banks and Volks- and Raiffeisenbanken in Germany, or the community banks in America, which lend to local folk. In Britain much of that network was stripped away by consolidation among savings banks and mutual building societies, and their conversion into joint-stock companies. The Post Office also sold its Girobank to Alliance & Leicester, a demutualised building society that is now part of the Spanish Santander group.

Colin Breed, a Liberal Democrat MP, has proposed licensing new community banks to offset the "massive over-concentration" in the high street. He would like to see credit unions beefed up. Something of the kind is in the works, although credit unions may not become full-fledged banks. The Treasury and ABCUL (the credit unions' trade association) are working on legislation, likely to apply from next October, that makes credit-union membership more flexible, letting in firms and members from outside a region. It would also allow interest (rather than just dividends) to be paid on deposits, to attract a wider deposit base. Unlike banks, credit unions do not borrow on the wholesale market. They make loans to self-employed traders but not to companies, though the new law will change that.

Three-quarters of Britain's existing 500 credit unions have fewer than 2,000 members. But there are some big ones, such as Scotwest in Glasgow, which has 21,000 members and extends mortgages. Partners Credit Union in Liverpool, a merger of five unions, is about to move its office from the Cotton Exchange to downtown Dale Street, cheek by jowl with the high street banks. HSBC and RBS, look out.

Scottish politics

Follow the money

Dec 4th 2008 | EDINBURGH
From The Economist print edition

An attempt to make devolution work better creates as many problems as it solves

WHEN the newly elected Labour government set up the Scottish Parliament in 1999, it was in part to deal with Scots' complaints that for 18 years they had voted against the Conservatives and yet always ended up with Tory national governments. Devolution was also supposed to kill off Scottish nationalism. But now the devolved Scottish government is in the hands of the avowedly separatist Scottish National Party (SNP). Something seems to have gone wrong. Fixing it, though, is likely to give Labour another set of headaches.

After the Labour Party had recovered from the shock of losing the 2007 Scottish Parliament elections, it persuaded the other unionist parties—the Conservatives and the Liberal Democrats—to set up a commission to review devolution and how it might be improved. Chaired by Sir Kenneth Calman, a former chief medical officer of both the Scottish and the British governments, it produced an interim report on December 2nd.

The thorniest issue Sir Kenneth has to deal with is how Scotland should get the money it spends. Most of its devolved budget, £31.3 billion in 2008-09, comes from a block grant from the British Treasury. Annual changes are determined by a formula based on population intended to ensure that Scots get the same increases (or decreases) in public spending as the English. Apart from local council taxes, the Scottish government's only tax-raising power is the (so far unused) ability to vary basic-rate income tax by up to 3p in the pound.

This set-up, most participants told the Calman commission, is not satisfactory. Politicians are not responsible for raising the money they spend. Even Gordon Brown has said that Holyrood's "financial accountability" needs examining.

Looking at other countries that devolve power to regional governments—Canada, for example, or Australia—has convinced Sir Kenneth that there is no ideal solution. And before he designs a tax system for Scotland, he reckons politicians must decide what their aim is. If it is to ensure equal funding for public services everywhere in Britain, that would rule out devolving taxes, because Scotland raises less than its government spends. If the goal is more autonomy, one consequence would be the unequal provision of services.

One approach, he suggests, might be "assigning revenues", a system used in Germany to give its regional governments a percentage of the federally-raised VAT, income and company taxes that are raised within their borders. This could be adapted so that Scotland would keep all income tax and VAT raised north of the border, for example, but Westminster would continue to set the rates. The main advantage claimed for this approach is that anything Scottish politicians did to affect the local economy would also alter their tax revenues. A drawback is that setting tax rates is an important tool for any government anxious to influence economic activity; nationalists argue that Scotland needs to have full control of taxation if its economic performance is to match that of, say, Ireland over the past decade.

Switching to assigned revenues could rile the majority of Scots who don't favour independence, too. As in Germany, an equalisation mechanism would be needed to redistribute revenues from rich areas to poor ones. Spending is now 18% higher per head in Scotland than in Britain as a whole; reassessing things could mean the Scots getting less. Either way it would make their subsidy by English taxpayers more transparent, at a time when many of the latter are feeling cross about it. That would give Labour a headache in two countries instead of one.

Measles and MMR

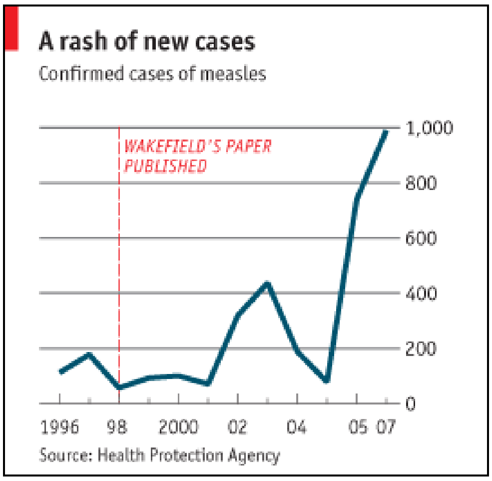
Sow the wind

Dec 4th 2008
From The Economist print edition

The long-lasting consequences of a health scare

FLEDGLING engineers learn about disasters like the 1988 Piper Alpha oil-rig fire or the explosion of the space shuttle *Challenger* in 1986 as a reminder of the dangers that attend their profession. Perhaps, if the subject ever achieves respectability, media-studies undergraduates will pore over the measles, mumps and rubella (MMR) vaccine scare in 21st-century Britain.

On November 28th the Health Protection Agency (HPA), which monitors infectious diseases, said that there were 1,049 cases of measles in England and Wales in the ten months to October 2008. Even before the year is out, that makes 2008 the worst year since 1995, when current reporting methods began (see chart). The rise, says the HPA, is due to a fall in vaccination rates. In 1998 91% of two-year-olds were immunised, but by 2004 that had fallen to 80%, far below the 90% rate needed to keep the disease under control.



Reluctance to vaccinate stems from a health scare surrounding MMR, a three-in-one vaccine designed to protect children from measles, mumps and rubella. In 1998 Andrew Wakefield, then a lecturer at London's Royal Free Hospital, suggested that MMR could cause autism and opined that single-use vaccines should be used instead (although the paper he based his recommendations on asserted no such link).

Three years later, Dr Wakefield published another paper and the scare got into its stride. A breathless media blew his findings out of all proportion, making the idea of a link between MMR and autism into a huge story. Tony Blair, then prime minister, assured the public that MMR was safe but refused to say whether his own son had been vaccinated. Reassurances from doctors and ministers were widely disbelieved by a public which remembered soothing noises about BSE that were later proved wrong. A string of subsequent studies (and a meta-study of 31 other papers) found nothing to suggest that MMR has anything to do with autism. But it was too late: by then many parents, egged on by anti-vaccination campaigners, were refusing to give MMR to their children.

Epidemiologists at the HPA worry that the cohort of unvaccinated children may lead to a big outbreak, with between 30,000 and 100,000 people falling ill. That would mean a number of deaths: the fatality rate for measles in rich countries is one in somewhere between 2,500 and 5,000. Something similar has already happened with mumps: 55,000 people fell ill between 2004 and 2006 (death from mumps is exceptionally rare).

Happily, the dip in vaccination seems to have been temporary. Immunisation rates today are 85% and rising, and the government is running a catch-up programme for those who missed their jabs the first time round. Lessons have been learnt, too: Tammy Boyce, a research fellow at the King's Fund, a health think-tank, says that professional bodies such as the Royal College of Paediatrics and the Royal Society now try harder to dampen scares early.

But she lays much of the responsibility for the MMR furore at the door of a scientifically illiterate, scaremongering press. And whereas health officials may have learnt from their experiences, she is less sure about the fourth estate. "Have the media learnt anything?" she wonders. "No, on balance, I don't think they have." With some of the campaigners that opposed MMR now questioning the safety of a vaccine designed to protect teenagers against the human papilloma virus, a common sexually-transmitted infection, that is a depressing conclusion.

Bagehot

The unfinished revolution

Dec 4th 2008
From The Economist print edition

Explaining Britain's—and Parliament's—ambivalent approach to liberty

Illustration by Steve O'Brien

SPEAKER Lenthall has not enjoyed such publicity for 350 years. Commentators have deployed assorted historical analogies for the arrest of Damian Green, the Conservative immigration spokesman, and the search of his parliamentary office by police: Stalinism, Zimbabwe, the Stasi, Watergate—and, as a contrast, the momentary heroism of William Lenthall. His newly recollected act of defiance is comparatively apt: in 1642 Lenthall refused Charles I's request that he identify five uppity MPs, whom the king had come to the House of Commons to arrest. War soon broke out between Charles and Parliament.

Speaker who? Lenthall has a cameo role in "The Devil's Whore", a 17th-century drama series that, by coincidence, is currently airing on British television. But before his recent name-checks, he was scarcely a figure of national repute as, say, Paul Revere is in America. And beyond the timely body- and bodice-ripping of "The Devil's Whore", and outside a dedicated band of battle re-enactors, the English civil war itself has an oddly low profile these days. It led to the beheading of a king and a brief republic, but it didn't produce a slogan, as the French revolution did, or a public holiday, or many monuments, other than the rueful statue of Oliver Cromwell outside the Palace of Westminster.

The civil war is not really part of Britain's modern brand. Bagehot contends that this obscurity matters. It reflects and may partly explain Britons' ambivalent view of their rights and liberties. Those rights are cherished, yet dismissed; defended by a dedicated crew of lawyers and the odd politician, but worn carelessly by most and regularly assailed by blundering governments. Britain is a country that seems, often and worryingly, not to know how lucky it is, or how its good fortune came about.

Consider the mixed reaction to Mr Green's arrest. Perhaps some evidence will emerge that his relationship with a mole in the Home Office, who leaked embarrassing material about departmental incompetence, jeopardised national security, or that the liaison was criminally corrupt. If not, the treatment of Mr Green was an outrage: perhaps not one that renders Britain a Stalinist "police state", but certainly one that undermines the long-standing if uncodified privileges of MPs. Nor is it the only recent case of worryingly heavy-handed behaviour by the police. Yet while some MPs on all sides have fulminated, others are silent or equivocal. Gordon Brown and Jacqui Smith, the home secretary, have been staggeringly dismissive of their colleagues' anxieties.

It was Ms Smith, of course, who championed the government's most recent efforts, via anti-terrorist

legislation, to erode *habeas corpus*: the freedom from arbitrary detention that predates the civil war but was bolstered by it. Her attempt to extend the time suspected terrorists may be held without charge was opposed with admirable ferocity by some historically minded MPs and campaigners; but polls suggest that most ordinary Britons were unfussed, as they have been by other accretions of state power. A (narrow) majority of MPs backed the government (though the House of Lords later threw the plan out).

Behind both these episodes lies a species of insidious tyranny unknown to the 17th century. At the state opening of Parliament on December 3rd, the doors of the House of Commons were slammed in the face of Black Rod—an official who summons MPs to hear the Queen's Speech—to symbolise the Commons' independence, a principle the civil war was fought to affirm. But since the evolution of modern political parties, the threat to Parliament's primacy has come instead from over-mighty governments, able to manipulate MPs through whips and patronage. The row over Mr Green, which swiftly degenerated into a party wrangle, illustrates how far party loyalty has usurped some MPs' allegiance to Parliament itself. Thus the House of Lords sometimes appears the more reliable guardian of the civil war's legacy (ironically, since the revolutionaries temporarily abolished it).

Ah, the House of Lords. For much of the time since it was restored (with the monarchy) in 1660, democrats have wanted to remake it. The New Labour government inherited that reforming impetus and acted on it—sort of. The upper house still, somewhat incredibly, contains 92 hereditary peers, alongside the mass of appointed ones. It is a fudge characteristic of a country with an instinct for democratic progress, but a countervailing laziness—and only a dim recollection of its radical past.

Memory and forgetting

The civil war was not always so neglected. It was a hot topic for Whig historians of the 19th century and for Marxists in the 1960s and 1970s. Perhaps, in a mostly post-radical age, the struggle no longer echoes. Or perhaps the story simply seems too complicated for modern attention spans. It was messy, and not just in terms of gore. It lacks heroes: as "1066 and All That", a comic guide to English history, summarises, the Roundheads were "right but repulsive". They banned Christmas and succumbed to militarism and murder. The revolution was halting, sometimes inadvertent and superficially undone by the Restoration. Moreover, it was a parliamentary rather than popular revolt, and so transformed ordinary lives less than some other upheavals: it did not bequeath a general sense of civic pride and participation, as did the American and French revolutions that it helped to inspire. Britain still suffers from that shortcoming.

All the same, with the Glorious Revolution of 1688, the Bill of Rights of 1689 and the Act of Settlement of 1701, the civil war transformed the country. It deserves more space and celebration in the history curriculum, and on plinths and television. Britons might value their liberties more highly if they understood they were won in bloody struggle, not enjoyed through mere serendipity.

And there ought, perhaps, to be an urgent, remedial history course for some senior policemen—plus lessons on Speaker Lenthall and his peers for some MPs and ministers.

Economist.com WORLD INTERNATIONAL

Muslims and city politics

When town halls turn to Mecca

Dec 4th 2008 | DUISBURG, LYON AND ROTTERDAM
From The Economist print edition

For many European municipalities and a few American ones (see article) accommodating Islam is a big dilemma—but not an insoluble one

Eyevine

IN CITIES all over Europe, mayors are fretting about the coming religious festivities. No, not just Christmas lights. They want to ensure hygiene and order in the slaughter of sheep for the feast of Eid al-Adha on December 8th. This remembers the readiness of Abraham—the patriarch revered by all three monotheistic faiths—to sacrifice his son. Muslims often sacrifice a lamb, whose meat is shared with family members and the poor.

In the Brussels suburb of Molenbeek, where the dominant culture is that of Morocco, a circular from the district authorities reminds residents not to kill animals at home. It invites them to a “temporary abattoir” that will function for 48 hours in a council garage. Molenbeek is one of four areas of Brussels which have set up makeshift slaughterhouses, each with a capacity of at least 500 sheep. In practice, home killing is hard to stop, despite vows by the city authorities to prosecute offenders.

In places like Molenbeek, a few miles away from the European Union’s main institutions, talk of the continent’s transformation into Eurabia doesn’t sound absurd. Although Muslims make up less than 4% of the EU’s total population, their concentration in urban areas is altering the scene in some European cities.

In some of these places bad relations between Muslims, non-Muslims and the authorities are creating political opportunities for the far right. In east London, for example, arguments are raging over plans for a “mega-mosque” near the site of the 2012 Olympics. In rough parts of northern Paris, there are fights between Muslims and Jews. In Italian cities, where Muslims are numerous but not many can vote, Catholics and secularists have united to stop the erection of mosques.

Yet talk of civilisational war in Europe’s cobblestoned streets is out of line in one respect: it understates the ability of democratic politics, especially local politics, to adapt to new social phenomena. For cities to work, compromises have to be struck and coalitions assembled. In city affairs, more than in national politics, politicians borrow each other’s slogans and policies.

In London, many expected a change in municipal attitudes towards Islam when a Conservative, Boris Johnson, took over as mayor from Ken Livingstone, a leftist maverick who had feted Yusuf al-Qaradawi, a controversial Muslim preacher. But in October, when the fasting month of Ramadan ended, Mr Johnson worked as keenly as his predecessors had done with the Muslim Council of Britain to stage an Islamic celebration in Trafalgar Square.

Or take Rotterdam, where Ahmed Aboutaleb, a Muslim from Morocco, will take over as mayor at the start of 2009. On the face of things, Rotterdam has the ingredients for a Eurabian nightmare. Its Muslim population (at least 13% of the total, some say more) huddles in a few poor districts; there is a big white working class; and this is the home of Pim Fortuyn, the Islam-bashing gay politician who was killed in 2002. A group set up by Fortuyn—Liveable Rotterdam—remains active, though it lost control of the city hall to a Labour-led coalition in 2006.

A place in the European square

Muslim population in selected urban areas

	% of total	Population
Amsterdam	24.0	180,000
Bradford	16.0	75,000
Birmingham	14.3	143,000
Brussels region	17.0	160,000
Île de France	10-15	up to 1.7m
Greater London	8.5	625,000
Marseille	20.0	350,000
Rotterdam	13.0	80,000
Vienna	8.0	120,000

Sources: EUMAP; *The Economist* estimates; UK census

And yet for now the public mood in Rotterdam is one of compromise. Among the leftist councillors who induced Mr Aboutaleb to leave his government job, the talk is of reaching out to xenophobic voters. Some policies adopted by Liveable Rotterdam—such as house searches to find illegal immigrants—have been kept under Labour. And Labour councillors like Hamit Karakus (born in Turkey but now steeped in Dutch emollience) stress the need for sensitivity to the “host” community.

Muslim citizens, he says, must understand old Dutch people who fear to leave their homes because neighbourhoods have changed. Muslims, he adds, are entitled to call the Netherlands home and practise Islam, but must accept the basics of democracy, and equality between the sexes. For the foreseeable future, no *ezan*, or call to prayer, will be heard on Rotterdam’s quays: too provocative, says Mr Karakus.

In the rough dockside area of Feijenoord, a local Labour politician, Robbert Baruch, enthuses about the role of mosque committees in a “social network” that mitigates poverty. He has often helped Muslim groups to qualify for municipal funds by broadening (to include non-Muslims) the range of partners and beneficiaries in their social activities. While scholars debate the role in European history of Islamic culture, local politicians face practical issues. Should recreation be segregated by sex? What food should be served in schools? How should city workers dress?

Each European country has its own traditions and taboos. Since 1905 the French state (and public space such as ministries and schools) has been off-limits to religion; it is axiomatic that no faith can ask for political favours. Belgium is messily theocratic, with a raft of subsidies for “recognised” places of worship and religious teachers, a category that now includes Muslims.

Despite these contrasts, some dilemmas faced by local authorities with large Muslim populations vary little across Europe. And the responses are often similar. In east London, double-parking is tolerated when the streets fill with Friday mosque-goers; in Molenbeek, traffic is curbed during Muslim feasts. When there is an electoral, or practical, imperative to deal with Muslim concerns, local administrators somehow get round the taboos. Muslims, meanwhile, find themselves in strange alliances. Brahim Bourzik, a well-connected Rotterdam Muslim, co-organises public events with a gay newspaper: to remind people, he says, that gays have often spoken up for immigrants’ rights.

As a case of local pragmatism, take Lyon in France, where 16,400 pupils at primary schools returned from half-term to find a new lunch menu. Alongside the expected meat dish—*sauté de dinde*—there was a meatless alternative. Although it wasn’t presented that way, this change was a response to the fact that many Muslims won’t eat meat unless it has been killed in a halal way. In some city schools, about 40% of pupils had been skipping lunch.

Lyon council is the first in France to introduce in schools what it defensively calls a “secular menu”. Its meatless lunches are a neat compromise. Under France’s secular doctrine of *laicité* it would be unthinkable to make full halal meals; a gesture to “vegetarians” got round a problem that needed facing in a department where 300,000 Muslims (19% of the population) live.

When diet divides

One local civil-liberties group called the new policy "dietary apartheid". But the Lyon authorities hope to avoid the passions over food in schools (and other Islamic issues) that rage in, say, Antwerp. That port is a bastion of the Flemish-nationalist movement, Vlaams Belang, which plays on fear of Islam as much as linguistic chauvinism. In the last city elections in 2006, VB retained about a third of the vote, and was kept out of power only by a broad centre-left block. Between Antwerp and Rotterdam—both historic ports that are diverse but Dutch-speaking—there is a big difference in political climate.

Every time moves are made towards opening a new mosque in Antwerp (there are now 36), Vlaams Belang stages a noisy protest. Last January it brought to Antwerp a gaggle of far-right groups from across Europe; a cross-border effort to stop creeping Islamisation was duly proclaimed. And nationalist Flemings reacted with triumphant rage when an Antwerp bureaucrat quietly decided that, henceforth, all food in city schools would be halal. The finesse that other north European cities bring to inter-faith relations seems lacking in Flanders. A compromise over the apparel of Antwerp city workers—scarves were not to be worn when dealing with the public, but okay elsewhere—left all sides grumbling.

If relations between Muslims and others are tense in Flemish cities, that reflects the sick state of Belgium. In Brussels, Flemings accuse French-speaking bureaucrats of enfranchising francophone Moroccans so as to tilt the balance against Dutch. And as Hilde de Lobel, a VB legislator, puts it: "People say they haven't fought against the French language only to yield to Arabic."

The Flemish right has taken heart from the widely publicised protests against a large mosque in Cologne. In September a protest meeting in the German city (with participants from Flanders, Italy and Austria) was called off only after police clashed with counter-demonstrators.

But in Germany as a whole, inter-faith relations are happier than in Belgium. Take Duisburg, just 60km from Cologne, where Turks began arriving in the 1950s to work in the coal and steel industries.

In the suburb of Marxloh, in Duisburg's gritty outskirts, a big mosque has just opened with few problems. A history of inter-faith co-existence has made the region tolerant, says Peter Greulich, a city father in Duisburg. Still, when the Muslims of Marxloh decided to turn their prayer space (an old canteen) into a real mosque, they took no chances. Duisburg had been through a fight in 1997-98 over the call to prayer: "We learnt our limits then," says Zulfiye Kaykin, head of community outreach at the new mosque.

From the start, non-Muslims were brought in. A board of 25 people—from churches, voluntary groups and trade unions—was set up to figure out "how to integrate the majority community into the whole project", says Ms Kaykin. The mosque is something of a hybrid. It is built in a familiar Byzantine-Ottoman style, but some features reflect local needs. These include a community centre on the floor below the prayer space, serving both Muslims and non-Muslims. Planners didn't want a male-only Turkish tea room. Instead, the communal area hosts events for women, youth and the aged plus exhibitions of Muslim and Turkish culture for outsiders. A cabaret artist of Turkish origin has performed there: a first for a mosque.

Miracles do happen

What some call the "miracle from Marxloh" draws little local opposition. Neo-Nazis from elsewhere held a protest in 2005, but Duisburg united against it. The city's mayor, from the centre-right Christian Democratic Union, backs the project.

The mosque has also been a catalyst for change in the community. "Women have to come out of anonymity," says Ms Kaykin, herself a stylish, scarf-less dresser. Of the mosque's 740 members, 80 are women: a change from the old restriction to male heads of households. The mosque has big windows, in part to reassure Germans that nothing bad is being preached.

In Cologne, critics deplore the proposed mosque's visibility, and the height of its minarets. But in Marxloh, visibility is part of the point. Duisburg has more than 40 mosques, most in nondescript buildings. Some arouse suspicious talk of "parallel societies". A mosque that announces itself seems reassuring. "We need more mosques in our country, not in backrooms but visible," said Jürgen Rüttgers, the CDU premier of North Rhine-Westphalia, at the mosque's opening in October.

The fact that centre-right figures like him back Muslim construction projects shows how far political Europe has come in accepting Islam. In France, local politicians on the centre-right have let through initially controversial plans for large mosques—in Toulouse and Marseille, for example. Several French

city halls have faced legal challenges for giving mosques land too cheaply. But in France and Germany it is now widely accepted that more purpose-built mosques are needed.

None of this means that all problems over mosques—and other policy issues related to Islam—are solved. In Heinersdorf, a poor area of east Berlin, there was uproar when Ahmaddiya Muslims from Pakistan, a group which mainstream Islam eschews, set up a mosque. A local citizens' group called the newcomers "anti-women, anti-democratic and anti-Semitic" and the neo-Nazis were even ruder. But Abdul Basit Tariq, the imam, says the row died down a bit after the mosque opened in October, with the mayor of Berlin present.

On other touchstone issues, like segregated swimming, each country applies its own legal tradition. Rotterdam's Mr Karakus says this question is no harder than having set times for older swimmers. In France, things are tougher. This year, the mayor of La Verpillière, a village near Lyon with a Turkish population, had to stop a weekly session at the pool that was reserved for women. Non-Muslim women liked these dips as much as their Islamic sisters, but they were deemed to violate French ideals of equality. Fadela Amara, the government minister for cities, who is of Muslim origin and a feminist, called segregated swims a sop to fundamentalism.

But on some matters, a humane accommodation of Muslim customs is increasingly common. One such issue is burial. In Britain, Leicester has pioneered good practice in Islamic internment. In Lyon, the Regional Council for the Muslim Faith (CRCM) has secured Muslim plots, aligned with Mecca, in public cemeteries. On this question, and over sheep sacrifice, regional councils work better than the national body—the CFCM or French Council for the Muslim Faith—of which they are part. On slaughter, talks with the prefecture were "efficient and straightforward", says Azzedine Gaci, head of the Lyon CRCM.

This bears out an argument made by Jonathan Laurence, a professor at Boston College. As he puts it, local pragmatism often works better than high-stakes posturing between governments and "national" Muslim bodies. In the latter case, expectations are too high: governments want to resolve all their worries about security and political stability, while on the Muslim side, there is rivalry between ethnic groups and a compulsion to flex muscles. But Mr Laurence adds that for local deals to work, there has to be some national consensus about the limits of cultural freedom.

In many parts of Europe, the far right scored well by vowing to tighten those limits—only to lose ground, in some countries, as other parties adopted parts of their agenda (for example, by pledging to curb immigration), and as Muslims became more skilled at politics. However, there are areas of Europe where Islamophobia is still in the ascendant—such as Austria, where the far right took 29% of the national vote in September and picked a fight over teachers and veils.

In France and Germany, the centre-right has grown friendlier to Islam. In Italy, by contrast, the centre-left has been forced to take a tougher line over Islam by the xenophobic right. A mosque-building project in Bologna collapsed in April after its sponsors rejected terms imposed by a leftist mayor, such as transparent funding, and the severing of ties to a pan-Italian body which is seen as close to the Muslim Brotherhood. In Genoa, a leftist mayor has imposed even stiffer conditions (like a bar on minarets) on a mosque-building effort that began last year. But opponents still want a local referendum before work starts.

Neither in Italy nor elsewhere is there any ground for complacency about social peace in Europe's cities. The absorptive power of local democracy is great, but it is not infinite. From Amsterdam to Leicester, conurbations that now thrive on diversity could face problems if economic pressures put an end to the municipal largesse that keeps all groups happy. But at least this much can be said: there are enough examples of Muslims and non-Muslims learning to rub along, through the trade-offs of local politics, to disprove the fatalists. In urban Europe, there is nothing predestined about the clash of civilisations.

Economist.com WORLD INTERNATIONAL

Islam in urban America

Hockey and hijab

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From The Economist print edition

Home to the auto industry—and American Islam

Reuters

Hamburg? No, Hamtramck

THE gym at Bridge Academy is full of children playing floor hockey. Boys and girls squeal as they chase the puck; a helpless teacher looks on. A homely American scene, except that most girls wear the hijab. This is Hamtramck, a town within the borders of Detroit, where the Muslim factor plays big in local politics.

In America as a whole, the fate of Muslims differs confusingly from the situation in Europe. American Muslims are in many ways better integrated and more successful. The constitutional right to freedom of religion protects their right to build mosques. But many report a recent rise in anti-Muslim prejudice, especially in parts of America where Islam is a little-known “other”. Greater Detroit is different; Islam is a formidable force in public affairs. Michigan’s first Muslim state legislator served in the 1960s. The first female Muslim legislator was elected last month. In Hamtramck, two out of six councillors are Muslim.

South-east Michigan has the country’s highest concentration of Arab Americans, about 40% of whom are Muslim. The first migrants were lured by the car industry. Now the region’s Muslim population, estimated to be at least 150,000, includes not just people of Arab descent but African-Americans and immigrants from Bangladesh and Albania.

Social solidarity has helped Muslims to thrive. The Arab Community Centre for Economic and Social Services (ACCESS) has become a national model, offering succour to people of all faiths.

The hub of Muslim activity is in Dearborn, west of Detroit: this is the home of ACCESS and of an Islamic

Centre whose giant mosque dwarfs nearby churches. Two McDonalds outlets serve halal McNuggets. European officials often visit Dearborn to see its success, says Ahmad Chebbani, a civic leader.

Meanwhile Hamtramck (population 26,000) is changing from a Polish enclave into a growing Muslim one. Schools now compete for Muslim students, says Sally Howell of the University of Michigan. Mohamad Issa, who founded Bridge Academy and seven other charter schools, says his establishments are not religious; they can't be, as they get public money. But Muslims like the Arabic classes, days off for Muslim holidays and space for voluntary prayers. Detroit's public schools struggle to catch up; some offer Arabic classes and halal food.

Muslims in Detroit, thanks to strong institutions and numbers, feel better than elsewhere in America, though they still face prejudice, say Ms Howell and Amaney Jamal of Princeton University in a joint study. And no less than in Europe, local politics fosters odd alliances. Last month, Catholics induced Muslims in Hamtramck to vote down a gay-rights ordinance. Both there and in Detroit, Muslims and Latinos have co-operated to restrict racial profiling.

The familiar American saying that "all politics is local"—coined by the late Tip O'Neill—is often taken to mean that defence contracts have as much to do with aerospace jobs as with security. But the Irish-American's adage also has some relevance to questions of faith.

Monitor

Fresher cookers

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Technology and development: The humble cooking stove is being overhauled around the world with the help of "user focused" design

Environfit International

IF USER demand were the sole driver of innovation, the biomass cooking stove would be one of the most sophisticated devices in the world. Depending on which development agency you ask, between two-and-a-half and three billion people—nearly half the world's population—use a stove every day, in conjunction with solid fuel such as wood, dung or coal. Yet in many parts of the world the stove has barely progressed beyond the Stone Age.

The World Health Organisation (WHO) estimates that toxic emissions from cooking stoves are responsible for causing 1.6m premature deaths a year, half of them among children under five years old. In China 83m people will die from lung cancer and respiratory disease over the next 25 years, according to a recent report from Harvard University. Research from the University of California, Berkeley, on stoves in India, Guatemala and Mexico has found links between indoor air-pollution from stoves and increased incidence of pneumonia, cataracts and tuberculosis.

After an initial wave of stove design that sought to reduce deforestation through improved efficiency, scientists and engineers have turned their attention to stoves that minimise the levels of noxious emissions to which stove users—mainly women and children—are exposed. Crucially, they have also recognised the need to take account of the way in which stoves are actually used.

One of the principal problems the designer of a stove must solve is to optimise the thermodynamics. Typical stoves—including the basic "three-stone fires" still used in many parts of the world—draw in too much air during the combustion process, which cools the fuel and means more of it is needed. Even with more advanced designs, poorly insulated combustion chambers can add to the cooling effect and thus to the inefficiency. The challenge, explains Bryan Wilson of Envirofit, an organisation developing stoves for India (pictured above), is to optimise a stove's air-fuel ratio and minimise heat transfer to improve combustion efficiency.

Envirofit's latest stoves, introduced this year in a project sponsored by the Shell Foundation, use a carburettor design, with chimneys that draw air in through precisely calibrated inlets. Another model, the "Oorja", developed by BP and the Indian Institute of Science, has an integrated battery-powered fan to direct air to wood pellets in the combustion chamber, improving efficiency.

Better efficiency can reduce emissions, but does not solve the indoor-pollution problem. One solution is the “rocket stove”, a simple design that diverts the smoke outside. Other options include stoves that run on propane gas or pellets, or reflect solar radiation onto a cooking vessel. But specialist fuels and constrained cooking times can restrict their appeal.

As well as being efficient, stoves must also meet the conflicting objectives of being transportable and being rugged enough to withstand the rigours of daily cooking. Combustion chambers therefore present a “huge materials problem”, says Dr Wilson. Mild steel is the natural choice for a stove chassis, but such stoves do not last for more than a few weeks in the field. Nickel-content alloys are a better choice for durability, but more expensive. For insulating the stoves, ceramic linings are the materials of choice in the lab, but they are difficult to ship and present problems of consistency for mass production. Materials are therefore often limited to those available locally.

Even if they get the thermodynamics and materials right, designers must also make the devices compatible with local foodstuffs and cooking habits. A lot of the initial stove projects failed this test, says Daniel Kammen of Berkeley’s Energy Resources Group, who has worked on several stove projects in sub-Saharan Africa. A lack of field testing, he says, meant a lot of stoves were simply unsuited to users’ needs. The difference in cooking styles between countries, he says, can determine how—and whether—a new stove design ends up being used.

In the refugee camps of Darfur, the dough for the staple food, *assida*, requires vigorous stirring of the cooking pot. “None of the stoves we tested had been built with this in mind,” says Ashok Gadgil, the head of the Darfur Stoves Project. Only after the stoves were seen to tip over during cooking did Dr Gadgil and his researchers go back to the drawing board and refine the design. Other findings from the Darfur project shone new light on cooking habits. The original stoves had been designed to boil water, but researchers found that for each meal, two-thirds of the fuel was used to make sauces by frying onions, a process that requires a more intense, continuous heat. One criticism of BP’s Oorja stove is that it does not get hot enough to make traditional Indian breads.

If such cultural factors are not taken into account, people will not use the stoves. Dr Wilson says just 3% of chimneys provided as part of one project in India were being used, according to a later survey: the rest had been either sold or reused as irrigation channels.

And even the best stoves will always be less effective in the field than they are in the lab, says Kirk Smith, an expert on the impact of stove air-pollution on health. In a field where a large number of development projects are chasing small amounts of funding, getting solid data is essential for making the necessary improvements, he says. In parallel with the advances in the stoves themselves, researchers are therefore finding more precise ways to measure usage and pollution, including the placement of battery-powered heat sensors in users’ homes and the use of particulate monitors with data storage. “You don’t get what you expect—you get what you inspect,” says Dr Smith. It is a lesson that many in the field are belatedly learning.

Economist.com SCIENCE TECHNOLOGY QUARTERLY

Monitor

Quiet, please

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Military technology: Using rubber rather than steel tracks on military vehicles could reduce wear and tear on both soldiers and equipment


Illustration by Belle Mellor

RATTLING along in the “washing-machine environment” of an armoured personnel-carrier (APC) on steel tracks can shake the soldiers inside to the point of exhaustion, according to Dan Goure, a military analyst at the Lexington Institute, a think-tank in Arlington, Virginia. And J.G. Brunbech, an APC expert at the Danish Army Material Command in Oksboel, observes that the crew’s limbs are prone to becoming prickly and numb, and their hands get tired, because they must grip the vehicle’s safety handles tightly. The vehicle itself suffers, too. The vibrations cause rapid wear and tear—not to mention outright damage, especially to electronics.

In the past, engineers have tried to reduce these vibrations by fixing rubber pads to the treads. The pads wear out quickly, however, and often get torn or even melted. But now tough, new rubbers have come to the rescue. Moreover, these rubbers are not being used just as pads. Instead, they are crafted into enormous rubber bands that replace the steel tracks completely. The Danes are converting their entire APC fleet to rubber tracks. This will increase the amount of time a soldier can safely spend on board from just one and a half hours to ten hours.

Details of how the new super-rubbers are made are still classified, but the results are not, and they are impressive. Rubber tracks weigh less than half as much as their steel counterparts. That, in turn, allows the weight of the suspension system to be reduced by 25%. All this can cut fuel consumption by as much as 30%, says TACOM, the American army’s Tank-Automotive and Armaments Command.

Rubber tracks also provide more traction, in part because, being lighter, they can be made wider than steel tracks. That means vehicles fitted with them do not get stuck in the mud. The vehicles accelerate faster, too, and drivers say they handle almost as well on paved roads as wheeled vehicles do. On top of this, they are quieter. That has two benefits. One is that crews are often able to talk to each other without resorting to intercoms. The other is that it is harder for the enemy to hear them coming. According to Curt Aspelund, the head of tracks and suspension development at BAE Systems, a British defence firm that is collaborating with TACOM to design a new APC called the Manned Ground Vehicle (MGV), rubber tracks will reduce the distance from which the vehicle can be heard by 40%.

Rubber tracks are more reliable, too. Tracked military vehicles are notorious for breaking down. On average, the segments of a steel track must be repaired or replaced after just 400km (250 miles) of use. Carrying spare segments adds to a vehicle’s weight. Rubber tracks, by contrast, usually last more than 3,000km.

They are also kinder to roads. Traditionally, of course, that did not matter much. The whole point of a tank or an APC is that it is the ultimate off-road vehicle. But the growth of peacekeeping operations, in which showing the flag to the locals is an important tactic, means that road-friendly vehicles are becoming more desirable. The locals will certainly not love you if you chew up their tarmac and make their streets impassable.

As a result of all this, Soucy International of Drummondville, Quebec, one of the firms that makes the tracks, reports booming business. The armed forces of both Canada and Norway have converted almost all

their APCs to tracks made by Soucy. Those of several other countries, including Britain, Germany, Italy, the Netherlands, Singapore and Sweden, are following suit or are in the advanced stages of testing the tracks. France plans to start tests next year. And although America has not sent APCs with rubber tracks into action, they form part of Future Combat Systems, the Department of Defence's main modernisation programme.

At the moment, rubber tracks can support only vehicles weighing less than 20 tonnes. They are not strong enough for 50-tonne battle tanks. But this is changing. The MGV, for example, will weigh 30 tonnes, and Canada recently began a trial of rubber tracks on the Mobile Tactical Vehicle Light (MTVL), a 22-tonne APC. If the MTVL passes muster it will join Canada's rubber-tracked 20-tonne M113 APCs in Afghanistan. Soucy, meanwhile, is developing rubber tracks for full-sized tanks. Warfare, it seems, is about to get quieter.

Economist.com SCIENCE TECHNOLOGY QUARTERLY

Monitor

A stitch whose time has come

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Medicine: A protein extracted from cows' blood could provide the best answer yet to the age-old question of how to sew up wounds

FIFTY years ago a soldier injured on the battlefield would be sewn up by medics using sheep's gut. A hundred years earlier they would have used silk; before that, metal wire. Today, surgeons often prefer plastics such as polypropylene. Sutures have a long and bizarre history, dating back to ancient Egypt, where everything from tree bark to hair was used to stitch human flesh back together again.

The latest suggestion, though, is probably the most bizarre of the lot: bovine serum albumin, a protein found in cows' blood. The reasons for picking it are that it is already produced on a commercial scale (it has many applications in biochemistry) and that it is sufficiently similar to human serum albumin, one of the most abundant proteins in the human body, for the immune system not to notice it. That reduces the risk of a wound becoming inflamed. But there is a problem. Bovine serum albumin does not come in thread form.

Eyal Zussman and his colleagues at the Technion-Israel Institute of Technology in Haifa think, however, that they have found a solution to this problem. They propose to use a technique called electrospinning to turn the stuff into threads that a surgeon can use. Electrospinning works by connecting a needle-like spinneret to a high-voltage power source and releasing a charged liquid from it towards an earthed collector plate. Like a spark between a cloud and a lightning conductor, the liquid stretches out to the collector. If the molecules within it hold together while this is happening, a solid thread may form.

Some materials, however, are easier to spin in this way than others, for if the molecules do not stick together, the liquid stream will break up. And, until now, that has been true of bovine serum albumin. The molecules of this protein are more or less globular, and are held in that shape by internal cross-links between different parts of the amino-acid chain of which the protein is composed. That discourages them from forming fibres. Although electrospun bovine serum albumin does not actually break up into droplets, the resulting threads have been so short and irregular as to be useless.

What Dr Zussman and his colleagues have managed to do is break the internal bonds in the protein molecules by mixing them with a chemical called beta-mercaptoethanol. The result, as they recently reported in *Biomacromolecules*, is that they can spin bovine serum albumin into long, even fibres that are perfect for creating both suture threads and thick mats similar to conventional wound dressings, but on a small scale. Not only are these threads and mats readily accepted by the body, but the albumin of which they are composed has glue-like properties, which helps to stick torn tissues together.

The consequence is that sutures made with these new threads are expected to reduce the scarring left when the stitches are removed. More significantly, the fact that they do not provoke inflammation means they it might be possible to use them to repair the wounds of patients with conditions such as diabetes, in which chronic skin infections often get in the way of healing when normal stitches are used. That would be a real advance on polypropylene and sheep's gut.

Monitor

How green is your network?

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Environment: Telecoms firms are reducing the power consumption of their networks, for economic and environmental reasons

Illustration by Belle Mellor

LIKE many other industries, the telecoms industry is increasingly worried about its energy consumption and the associated carbon footprint. This is not just because rising energy prices have made it more expensive to run telecoms networks; it is also because telecoms networks and devices account for nearly 1% of global greenhouse-gas emissions, and the industry wants to avoid criticism from green campaigners. Unlike many other firms, however, telecoms operators find their carbon footprints quite easy to work out. That is because their footprints are dominated by one thing: running their networks.

For example, Vodafone, a giant European mobile operator, estimates that its network accounts for 80% of its carbon footprint (the remainder is attributed to its offices, shops and vehicles). And three-quarters of the network's contribution is, in turn, associated with powering the base-stations that allow mobile phones to connect to the network.

Typically, around half of the operating expenditure of a network company goes on electricity, according to Ericsson, a leading telecoms-equipment manufacturer. The proportion tends to be higher for operators in the developing world because their base-stations may be in remote areas, and therefore require diesel-fuelled generators. So the recent spike in energy prices has prompted operators to look for ways to cut costs. "The operators are feeling it," says Elaine Weidman, Ericsson's director of corporate responsibility.

Fortunately there are some relatively simple ways to reduce the energy consumption of a base-station. The first is to turn down the air-conditioning. Many mobile operators now run base-stations at a standard temperature of 35ºC, rather than the previous norm of 25-30ºC. Studies show that the higher temperature does not reduce the equipment's reliability or life expectancy. "The biggest restriction is actually our technicians, who do not like going into the hut to work at 35 degrees," says Andy MacLeod, Vodafone's global networks director.

Operating at this temperature means ambient air can be used for cooling, even in hot countries. An air-filter is installed on one side of the cabin, and a fan is installed on the other, resulting in a steady flow of air. Vodafone plans to replace air-conditioning with this simpler approach, called "freecooling", in the majority of its base-stations over the next three years, as part of a plan to reduce its carbon footprint by 50% between 2006 and 2020.

Other energy-saving tips are even simpler. In many hot countries, telecoms firms paint the exterior of base-stations white to deflect the sun. Another power-saving measure is to turn off base-stations

completely when they are not busy. In densely populated areas, many base-stations are installed to boost the network's capacity, rather than to provide essential coverage. In quiet periods when there are fewer calls to handle, such as the middle of the night, some base-stations can be turned off. A further trick is to redesign the base-station to make it more energy-efficient. A technique called "remote radio-head" involves shifting radio equipment from the cabin to the top of the mast, where it is cooled naturally.

Efforts are also under way to exploit renewable sources of energy to power telecoms networks. Leading equipment-makers such as Ericsson and Nokia Siemens Networks have installed hundreds of base-stations powered by solar panels, wind turbines or biofuels, mostly in parts of the developing world where there is no electricity grid. The number of renewable-powered base-stations will increase as networks expand into rural areas of the developing world. But so far they make up only a tiny proportion of the total.

There is also scope to reduce the environmental impact in another area: the handsets. Nokia, the world's biggest handset-maker, has been looking at making mobile phones entirely from recycled materials such as plastics from drinks bottles and old tyres. Sony Ericsson, another handset-maker, recently announced a project called GreenHeart, which proposes various things the company would like to include in future devices, such as bioplastics and recycled materials, a low-power charger and online rather than paper-based user manuals.

The problem for operators is that even as they become more energy-efficient, network expansion and subscriber growth may still increase their overall carbon footprints. The Smart 2020 report, published in June by the Global e-Sustainability Initiative, a partnership of technology firms and industry associations, and the Climate Group, a non-profit environmental club, predicts that global emissions from telecoms networks and handsets will more than double between 2002 and 2020 as adoption increases.

The same problem also affects fixed-line telecoms networks, as broadband infrastructure is upgraded from copper wires to optical fibres and new equipment is installed to handle larger volumes of data. Verizon, a big American operator which is deploying a high-speed fibre network in several regions, has asked equipment-makers to build gear that requires less power. A poll carried out by Verizon found that most of its suppliers thought they would be able to reduce power consumption in new equipment by 10-15% without loss of performance. It has set a goal of 20% for equipment being installed from 2009, says Chuck Graff, Verizon's director of network technology.

BT, Britain's biggest fixed-line operator, has set a goal of reducing its emissions by 80% by 2020 by switching to more efficient equipment and sourcing electricity from low-carbon sources such as wind. As with cars and computers, the focus in telecoms is no longer solely on performance, but on efficiency, too.

Economist.com SCIENCE TECHNOLOGY QUARTERLY

Monitor

Moving images into the future

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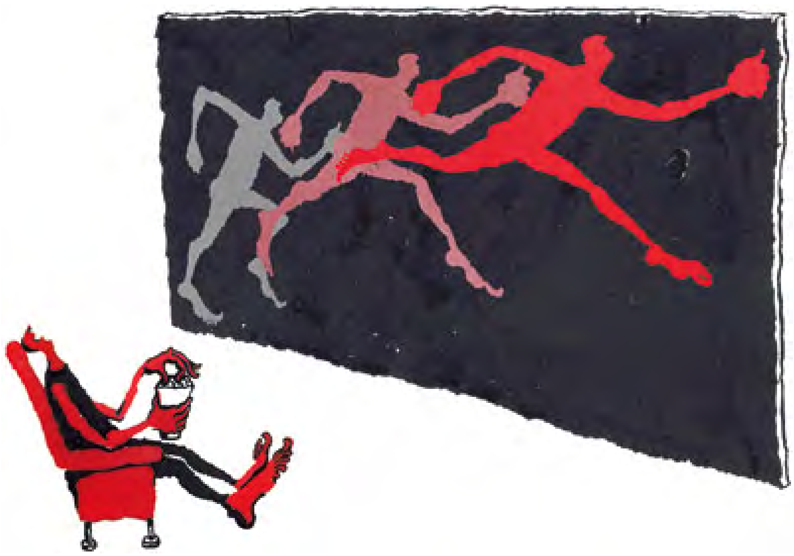
Entertainment: Digital-cinema projectors that use lasers rather than xenon lamps could lead to richer colours on the silver screen

Illustration by Belle Mellor



ONE reason people prefer watching films in cinemas to sitting at home with a DVD is that 35mm-film projectors render a richer range of colours, closer to the range of hues that the human eye can perceive. Even today, a conventional plasma-screen television set produces only 50% of the range of colour (known technically as the gamut) that the eye can perceive. Film, by contrast, manages around 60%. But film has a fundamental problem. A pristine print of a movie has rich, vibrant colour, but every time that print is projected it is degraded, and eventually it has to be replaced.

Digital cinema-projectors get around this problem, but purists complain that the gamut is not as rich as with film. That may soon change, though, thanks to a new digital cinema-projector that uses lasers. It has been designed by a group of researchers at the Chinese Academy of Sciences in Beijing, led by Bi Yong, in collaboration with a firm called Phoebus Vision OptoElectronics Technology. It can produce an eye-popping 80% of the range of colours that the human eye can see.

In both a 35mm projector and a digital projector, a bright source of white light provides the illumination. This is commonly a xenon lamp, in which electricity is arced through a tube filled with the gas. In a standard 35mm projector, the image is projected through the film and on to the screen using a series of lenses.

In the case of a digital projector, the white light is first separated into blue, green and red components and then fed into an optical-processing device that makes use of microelectromechanical technology to generate the image. Hundreds of thousands of microscopic mirrors are employed, each of which can be tilted into one of two positions. Each mirror corresponds to a single picture element (pixel) in the projected image and acts as a beam-steering device, controlling whether that pixel is light or dark. Intermediate shades are created by tilting the mirror backwards and forwards thousands of times a second to vary the brightness of the pixel. This approach is called “digital light processing” (DLP).

The idea of using lasers as light sources for projectors dates to the 1960s, but two things held it back. First, in those days, lasers were bulky, expensive devices, whose only role in the cinema was to threaten to cut James Bond in half. That problem has gone away as compact and inexpensive semiconductor lasers

have become commercially available. The second problem, though, is that laser light can "speckle", which is to say that when it scatters off a rough surface, a random shimmering and sparkling pattern is produced. Speckle, a consequence of the narrow range of light that a laser produces, degrades the sharpness of the projected image. It is this problem that Dr Bi and his colleagues have overcome.

They use several red, green and blue lasers and feed the light from these into an optical fibre to produce white light. Because the operation of each laser is independent of the others, their speckles cancel each other out. That done, the white laser light is filtered back into red, green and blue light and projected using the DLP system.

Dr Bi has, however, gone further than just eliminating speckle. He notes that if the red laser light used is made redder and the blue laser light made bluer, the gamut of the projected image increases. Indeed, the theoretical maximum gamut of a laser-based system is almost 90% of what the human eye can perceive.

The disadvantage of this increased redness and blueness is that higher-power lasers are required. But that may not matter too much. Lasers are more efficient than xenon lamps, which waste a lot of energy as heat. Dr Bi and his colleagues calculate that even with the boosted lasers their projector needs only 35% of the power required to run a normal digital projector. On top of that, lasers last for a long time, whereas xenon lamps burn out and need to be replaced periodically. Running costs should therefore be lower.

The initial cost will still be higher, though, at least to start with. When launched, Phoebus's projector is expected to be ten to 20 times more expensive than those that use a xenon lamp. But that, no doubt, will change as the cost of lasers drops. Just as they have improved things in countless other areas, from telecommunications to compact-disc players, lasers could thus make going to the cinema even better than it is now.

Monitor

A really secret ballot

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Security: A variety of schemes to encrypt ballot papers should reassure voters and help to make elections more secure

Illustration by Belle Mellor

AFTER the hanging-chad fiasco in the American presidential election of 2000, caused by unreliable mechanical voting machines, and the refusal four years later of some manufacturers to reveal exactly how the electronic devices they proposed as replacements actually worked, the search is on for a way of voting that is both reliable and trustworthy. Trustworthiness, at least, might be achieved by encrypting people's votes. That would make it hard to interfere with the process of counting them and, as a bonus, if they went astray (as seems to happen distressingly often to data when government officials meet information technology) no harm would be done.

One way of doing this has been devised by Peter Ryan, a computer scientist at the University of Newcastle upon Tyne, in England. He calls his approach "Prêt à Voter". It uses paper ballots which are scanned by an optical reader. Each ballot has two halves. The candidates' names are on one side and the tick boxes on the other. A voter ticks the box he wants, then divides the paper, putting only the half with the tick on it into the ballot box.

The trick is that the candidates are listed in random order on each ballot paper. If there are three candidates, there are six possible orders. If four, 24. If five, 120. And so on. Each possible order is equally represented among the papers. Anyone looking at the deposited half of the paper cannot, therefore, tell in whose interest it was cast.

However, the machine that is used to scan the ballots can tell. This is because each deposited half also carries a code (a numerical code or a bar-code) representing the candidate order on that particular paper. To decipher this code, and thus determine the value of the vote, a numerical key is required. That key is held only by the official in charge of the election or, for extra security, it can be divided among several officials and party representatives.

Ben Adida and Ron Rivest, of the Massachusetts Institute of Technology, have elaborated upon Dr Ryan's system to create what they call "Scratch & Vote". The ballot paper looks like the one used in Prêt à Voter, with the addition of a scratch-off area of the sort employed in instant lotteries. This provides as an extra level of security, because it contains the data used to randomise the candidate order on that particular ballot paper. Such data can unlock the individual code on the ballot paper, in order to make sure everything matches, in conjunction with a number known as a public key. (This differs from the private key used by election officials to decrypt the vote in the absence of the original randomisation data.)

Under the Scratch & Vote scheme, a voter is offered two identical ballot papers. He votes on one, and the candidate list and scratch area are then removed and destroyed. He may also choose another, and give it a trusted organisation to verify its integrity (by combining the data from the scratch area with the public key to make sure everything matches). Since the voter himself has decided which of the two ballot papers carries his actual vote, it is hard to "game" the system by feeding him a true and a false paper.

A third approach to the idea of encrypted ballots is called Scantegrity II. It was designed by David Chaum, a computer scientist and cryptographer who, among many other things, invented the idea of digital cash. Instead of putting a cross next to the candidate's name, a voter fills in an oval-shaped space, known as a bubble, next to the name. So far, that is similar to one widely used American system. However, in the

case of Scantegrity the voter does not use an ordinary pen, but a special one with “ink” that reacts with a pattern of two chemicals printed inside the bubble.

One of these chemicals darkens the whole bubble, so that its position (and thus the candidate voted for) can be recorded by a standard optical-reader. The other becomes visible in a contrasting colour to reveal a previously invisible three-character code, derived from a random-number generator. Since the optical readers employed by this system do not have character-recognition software, this code cannot be read by the vote-counting machine. But it can be noted by the voter on a detachable receipt at the bottom of the ballot paper. He can then, if he wishes, check things are in order by entering the serial number of his ballot paper into a website set up for the election. It should respond with the appropriate code. If the code does not match, something is awry, and an investigation can start.

None of these approaches has yet been widely tested (although Dr Ryan has tried his out on those traditional laboratory animals, undergraduates, by encouraging Newcastle’s students to use Prêt à Voter in their elections), so they were not used in this year’s American presidential election. Fortunately there was no repeat of the hanging-chad fiasco. But cryptographic voting of some form is surely a strong candidate to appear on the ballot in a future election.

Economist.com SCIENCE TECHNOLOGY QUARTERLY

Monitor

Green iron

Dec 4th 2008
From The Economist print edition

Environment: Treating industrial wastewater with scrap iron can be a cheap and effective way to reduce pollution from factories

SCRAP conjures up visions of rusting junkyards on the wrong side of the tracks. But this image could soon be given a green makeover. Researchers have found that iron filings from factories can be a cheap and efficient way to clean up polluted water. Because such scrap is widely available, the idea could be particularly useful in developing countries.

The new approach is being used to treat wastewater in the Taopu Industrial District of Shanghai, which is home to many small pharmaceutical, petrochemical and textile factories that discharge water contaminated with dyes, phosphorus and nitrogen. The project, which began in August 2006, now treats about 60,000 cubic metres (about 13m gallons) a day of industrially contaminated water—which is about the volume of municipal wastewater that a small town generates.

Wei-Xian Zhang of Lehigh University in Bethlehem, Pennsylvania, and Luming Ma of Tongji University in Shanghai have been using the Taopu wastewater facility to test their methods of treating industrial wastewater using iron filings. Iron powder (technically called zero-valent iron by chemists to show that it has not oxidised) has been used to treat groundwater for more than a decade. It is used to remove dangerous substances such as trichlorethene (used in paint strippers and adhesives) and arsenic. But no one had tried using iron filings to treat water discharged from factories before.

The standard technique for treating wastewater is to pass it through a series of tanks containing biological agents, such as biofilms, bacteria and other aerobic organisms, that break down the contaminants in a few days. But this often does not work with water from factories, especially as it may contain synthetic compounds that are toxic and not biodegradable.

Dr Zhang had previously invented a method to clean groundwater and contaminated soil using iron nanoparticles. It was effective, but such nanoparticles are expensive: about $100 a kilogram, which can prohibit their use in developing countries. Dr Zhang, who did his undergraduate degree in Shanghai before moving to America, thought iron filings, which have a large surface area, might provide a cheap alternative. Scrap iron currently costs about 20 cents a kilogram in China. His idea was to treat industrial wastewater by passing it through the iron filings, and then treat it as municipal wastewater. The non-biodegradable industrial chemicals are attracted to the surface of the iron shavings, where they react by sharing electrons with the iron and become degraded. (The iron gets oxidised in the process.) Any biodegradable contaminants that remain are then neutralised by the second step.

Dr Zhang found that treating the iron filings with a solution of copper chloride increased their effectiveness (and put the cost up by only about five cents a kilogram). He teamed up with Dr Ma in Shanghai about five years ago. Using 40kg of scrap iron, they ran a prototype experiment which showed that the method worked. Then the full-scale treatment facility came into operation. It consists of ten parallel cells containing a total of 914,000kg of iron filings, all purchased locally. (The iron lasts about two years before it has to be replaced.) Some 80% of the water treated is industrial discharge.

Compared with biological treatment alone, big improvements have been recorded. The removal of nitrogen has gone from 13% to 85%; phosphorus from 44% to 64%; and colours and dyes from 52% to 80%. Given the success of the technique, Dr Zhang and Dr Ma have now been invited by several municipalities in China to help with the establishment of similar treatment centres. The two researchers are also working on a much larger treatment centre in Shanghai that can handle 100,000 cubic metres of wastewater a day. Dr Zhang hopes his method will open a new chapter in the treatment of industrial wastewater, not least because the vital ingredient is cheap and abundant.

Economist.com SCIENCE TECHNOLOGY QUARTERLY

Monitor

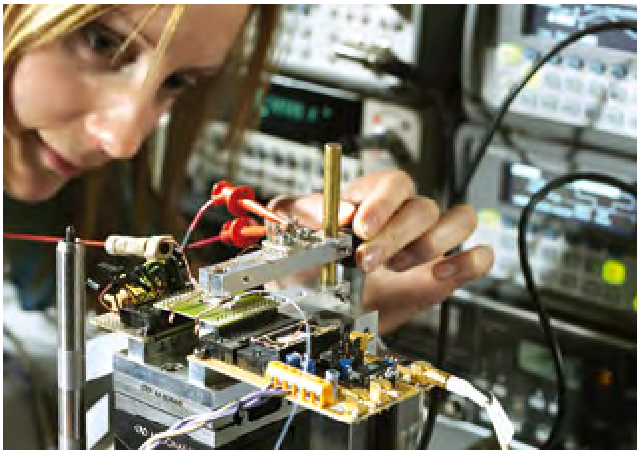
Spinning a good tale

Dec 4th 2008
From The Economist print edition

Medicine: A quantum-mechanical effect used in hard disks may hold the key to the development of a hand-held biology laboratory

BIOTECHNOLOGISTS have long dreamed of creating a "lab on a chip" that would pack the power of a full-scale analytical laboratory into an object as small and as easy to use as the hand-held scanners familiar to fans of science-fiction. Such a device might detect biological weapons, run genetic tests or sniff out contaminants. Staff at clinics could use it to screen people for infectious diseases.

Phillips Research



The medical tricorder starts here

Many designs have been proposed for such a device, but none has really taken off. The latest, though, sounds promising. It uses a quantum-mechanical effect called giant magnetoresistance (GMR), which is also the basis of modern hard-disk drives. Prototypes made in Europe and America have indeed been able to detect everything from deadly toxins to illegal drugs and markers of disease.

Giant magnetoresistance relies on devices called spin valves. These are made by interleaving thin sheets of magnetic and non-magnetic metals to form a sandwich composed of layers mere nanometres (billionths of a metre) thick. If a nanoscale sandwich is exposed to a magnetic field, the quantum spin of its electrons, and hence its electrical resistance, changes in a way that is easily detectable.

In 1998, however, it occurred to David Baselt of the United States Naval Research Laboratory (NRL) in Washington, DC, that spin valves might also make excellent biosensors. Biological materials are not usually magnetic, but they are often chemically specific. Dr Baselt wondered if tiny magnetic particles could be attached to molecules using either antibodies (which will bond to proteins, sugars and so on) or single-stranded DNA (which will bond to a complementary DNA strand to form the famous double helix). Searching for a target molecule would then involve sprinkling a sample thought to contain it with magnetic nanoparticles coated with the appropriate antibody or DNA, and running it over a spin valve.

It is a simple idea. But it has taken Dr Baselt and his colleagues, along with researchers in several other organisations, ten years to turn his insight into a practical technology. The details of the various prototypes differ, but the principle is the same. The spin valves and the channels needed to feed samples into them are built onto silicon wafers using chipmaking techniques. Magnetic nanoparticles are attached to sample molecules using antibodies or DNA, and each spin valve on the chip is coated with antibodies or DNA strands that react with only one sort of target molecule. This means that a single chip can search for many targets at once. (Searching for more than one target using standard methods often requires large samples and a series of tests, but a GMR chip can do the job in a single pass with a sample as small as a

single microlitre.)

Nanoparticles in a haystack

Such chips are extraordinarily sensitive. Prototypes built by researchers at the Naval Research Laboratory, Stanford University and Philips, a Dutch electrical-goods firm, can detect a substance that is present at a concentration of less than one part in a million billion. Liesbet Lagae, who works at IMEC/MCP, a microelectronics laboratory in Belgium, and Paulo Freitas, of INESC, a similar organisation in Portugal, claim even more striking results. Their experiments can sometimes detect individual molecules. In particular, this sensitivity makes the new chips better at searching for strands of DNA. At the moment, such searches require the number of DNA molecules in a sample to be multiplied using a trick called the polymerase chain reaction (PCR) before there is a decent chance of detecting the target.

Nor are these advantages merely theoretical. Shan Wang of Stanford has used a GMR chip smaller than a postage stamp to detect carcinoma-embryonic antigen (a sign of colon and rectal cancer) and human papilloma virus, the main cause of cervical cancer. And at the NRL, Cy Tamanaha has had similar success detecting ricin, staphylococcal enterotoxin B and other potential bioweapons. Dr Tamanaha says the NRL has developed a battery-powered unit the size of a shoebox, and has licensed its design to Seahawk Biosystems, a firm based in Austin, Texas, for food-testing and environmental use.

Others researchers use magnetism not just to detect the target molecule, but also to carry it to the spin valve. In a paper in the *Journal of Immunological Methods*, Wendy Dittmer of Philips claims to have achieved a 100,000-fold increase in detection speed by hurrying magnetically tagged molecules of parathyroid hormone towards the spin valve with an electromagnet, instead of letting them diffuse there. Philips plans to introduce a hand-held drug-testing device in 2009, in partnership with Cozart, a British medical-diagnostics firm. This breathalyser, designed for roadside use by police, will scan suspects' saliva for drugs such as cannabis, cocaine and heroin.

There may be an even faster method, however—and one that avoids fiddling with electromagnets. Marc Porter, at the University of Utah, has brought nanomagnets and GMR sensors together with a simple swipe. In a pair of papers to be published soon in *Analytical Chemistry*, Dr Porter describes how he and his graduate students ran a slender glass stick larded with magnetic nanoparticles through a GMR reader. Dr Porter believes that an automated reader could scan a sample stick in a second, and he imagines a day when pharmacies will keep such readers on the premises, with customers bringing in personal "wellness cards" preloaded with bodily fluids and obtaining diagnoses without having to sit forever in a doctor's waiting room.

Monitor

And the winners were...

Dec 4th 2008
From The Economist print edition

Innovation awards: Our annual prizes recognise successful innovators in eight categories. Here are this year's winners

THIS newspaper was established in 1843 to take part in "a severe contest between intelligence, which presses forward, and an unworthy, timid ignorance obstructing our progress". One of the chief ways in which intelligence presses forward is through innovation, which is now recognised as one of the most important contributors to economic growth. Innovation, in turn, depends on the creative individuals who dream up new ideas and turn them into reality.

The Economist recognises these talented people through its annual Innovation Awards, presented in eight fields: bioscience, computing and communications, energy and environment, social and economic innovation, business-process innovation, consumer products, a flexible "no boundaries" category, and an award for the corporate use of innovation. The awards were presented at a ceremony in London on October 30th presided over by John Micklethwait, *The Economist*'s editor-in-chief. And the winners were:

Mr Wikipedia was a winner

• Bioscience: **Martin Evans**, director of the school of biosciences and professor of mammalian genetics at Cardiff University, for his work in **stem-cell research** and the development of **"knockout" mice**. Sir Martin performed pioneering research into stem cells, and used them to create mice with a specific genetic disorder. This led to the creation of "knockout" mice, which are used to model human diseases by deactivating a specific gene.

• Business Process: **Jimmy Wales** of Wikipedia for the promotion of **online public collaboration** as a means of content development. Mr Wales co-founded Wikipedia, a free, online encyclopedia, in 2001. Every entry is a wiki—a special kind of web page that anyone can edit. Today versions of Wikipedia exist in more than 250 languages, containing over 10m articles (2.6m in English), making Wikipedia the largest encyclopedia ever created.

• Computing and Telecommunications: **Matti Makkonen** for the development of Short Message Service (SMS), or **text messaging**. Mr Makkonen is a Finnish engineer who is credited with inventing SMS, which allows short messages to be sent between mobile phones. He proposed the idea in the 1980s while working at Finland's telecoms authority. Billions of text messages are now sent every day.

• Consumer Products and Services: **Steve Chen and Chad Hurley** of YouTube, for creating **an easy way to share video**. YouTube, founded in 2005, lets users upload video files via broadband connections. They can then be viewed on YouTube's own site, or embedded in pages on other sites. Viewers can add comments and ratings. YouTube quickly became a cultural phenomenon and is now the most popular video site on the internet.

• Energy and the Environment: **Arthur Rosenfeld** for his **promotion of energy efficiency**. Dr Rosenfeld is considered a founding father of the energy-efficiency movement. He established the Center for Building Science at Lawrence Berkeley National Laboratory and helped to develop more efficient lighting, low-emissivity windows and software to analyse the energy use of buildings.

• No Boundaries: **Sumio Iijima** for the discovery of **carbon nanotubes**. Dr Iijima discovered carbon nanotubes in 1991 while working as a researcher at NEC. They are the strongest and stiffest materials

known, with many unique properties. They are being applied in catalysts, batteries, fuel cells, solar cells and drug delivery.

• Social and Economic Innovation: **Bill Gates and Melinda Gates** for developing of a **philanthropic support platform**. The Bill and Melinda Gates Foundation was created in 2000 with a mission to improve lives around the world. As well as applying a rigorous, businesslike approach to philanthropy, it provides an enabling platform for other non-profit organisations. It focuses on improving health, reducing poverty and increasing access to technology in public libraries.

• Corporate Innovation: **Nokia** for its ability to respond to social and technological trends while maintaining its position as the world's largest handset-maker. The firm makes use of anthropologists and futurologists to steer product design, and recently launched its "Comes With Music" service, hailed as a promising new model for the music industry.

And thank you…

We extend our congratulations to the winners, and our thanks to the judges: Robin Bew, editorial director, Economist Intelligence Unit; Matthew Bishop, American business editor, *The Economist*; Andrew Cahn, chief executive, UK Trade & Investment; Marvin Caruthers, professor of chemistry and biochemistry, University of Colorado; Hermes Chan, president and chief executive, MedMira; Martin Cooper, chairman and chief executive, ArrayComm; George Craford, chief technology officer, Philips Lumileds; Hernando de Soto, chairman, Institute for Liberty and Democracy; Rodney Ferguson, managing director, Panorama Capital; Janus Friis, co-founder, Joost; Lisa Gansky, co-founder, Ofoto; François Grey, head of IT communications, CERN; Georges Haour, professor of technology and innovation management, IMD; Vic Hayes, former chair, IEEE 802.11 working group; Mo Ibrahim, founder, Celtel; Paul Jackson, principal analyst, Forrester Research; Mike Lazaridis, president and co-chief executive, Research in Motion; Yoichiro Matsumoto, professor, and dean of engineering, University of Tokyo; Edward McBride, energy correspondent, *The Economist*; Louis Monier, vice-president of products, Cuil; N.R. Narayana Murthy, chairman and chief mentor, Infosys; Andrew Odlyzko, professor of mathematics, University of Minnesota; C.K. Prahalad, professor of corporate strategy, University of Michigan business school; Andrea Pfeifer, chief executive, AC Immune; Sam Pitroda, chairman, National Knowledge Commission, India; Navi Radjou, vice-president, enterprise applications, Forrester Research; Rinaldo Rinolfi, executive vice-president, Fiat Research; Paul Romer, professor of economics, Stanford Graduate School of Business; Paul Saffo, technology forecaster; Jerry Simmons, deputy director for energy sciences, Sandia National Laboratories; Tom Standage, business editor, *The Economist* (chairman); Vijay Vaitheeswaran, health-care correspondent, *The Economist*; Jeff Weedman, vice-president of external business development, Procter & Gamble. The judging process was managed by Charles Pelton of Modern Media.

Economist.com SCIENCE TECHNOLOGY QUARTERLY

Rational consumer

Small is beautiful

Dec 4th 2008
From The Economist print edition

Computing: Netbooks are small computers that are cheaper and lighter than full-scale laptops. They have their merits—but do not ask too much of them

STEVE JOBS says Apple does not know how to make a $500 computer “that’s not a piece of junk”. Yet this article was written on a small computer that costs less than that—and barely a quarter of the price of the Apple iMac that sits on the desk beside it. Small, cheap mini-notebooks like this, or “netbooks” as they have come to be called, are not as fast or as capable as a big computer like an iMac, and in performance terms they trail behind most laptops. But they are certainly not junk, and for some people they may be the best computers money can buy.

Netbooks are a hot-selling consumer product. The first to appear on the market, a year or so ago, were aimed at children. But now they are proving popular not just with families and first-time computer buyers but also with power users who want something small, lightweight and cheap.

They typically have screens measuring seven to ten inches diagonally. They have built-in wireless networking, but lack an optical drive for CDs or DVDs. Some use flash memory for storage instead of a hard disk, which makes them more robust and extends battery life. Netbooks generally cost less than $500. IDC, a market-research firm, reckons worldwide sales of netbooks will reach 10.8m in 2008 and more than 20m in 2009, during which they will represent 11-12% of the entire laptop market.

Keep it simple

Most current models, including Samsung’s NC10, much of the Asus Eee range, the MSI Wind and the Acer Aspire One, use Intel’s Atom as their central processor. This is the chipmaker’s smallest processor, designed specifically for low-cost and portable devices, not for intensive number-crunching. But because a lot of things that people do with computers, such as e-mail, writing and web browsing, do not require fancy graphics or lots of processing power, netbooks can still be extremely useful.

The number of netbooks available is growing as more producers pile into the market (but not Apple—at least, not yet). But if you are buying one, avoid the temptation to get the slickest, most powerful machine available. Much advice on offer online suggests souping up the specification of a netbook so it can run Microsoft’s Windows XP operating system, rather than the free, open-source Linux system that is offered as standard on many netbooks.

Yet increasing the specification only makes sense for people who want to run (and to pay for) Windows and specific Windows-based applications. The extra hardware and software costs start to push the price of a netbook towards that of a standard laptop, which will invariably be better because it has a bigger

processor and superior graphics. For many users, the basic, free software shipped with a netbook will be quite enough.

The most basic model of the Acer Aspire One can be found for £179 in Britain and around $300 in America. It simply switches on and runs with the minimum of fuss. It has 8 gigabytes (GB) of flash storage and 512 megabytes of RAM, which is a bit puny. But that is perfectly adequate to run the customised version of Linux that comes pre-installed on it, along with a suite of software, including Open Office. With no hard drive, and a switch to turn off the wireless connection (not the fastest in the world), power can be conserved. So a bigger, bulkier battery may not be necessary either, unless you want to use the computer untethered for long periods. Because it boots up in a few seconds, rather than thinking of the Acer as a mini laptop it might make more sense to view it as a beefed-up personal digital assistant, such as an old PalmPilot or Psion, but with a better screen and a proper keyboard.

But what about the lack of storage? Again, the way the machine can be used addresses this problem. First, netbooks are designed to be used with the net, which is where an increasing number of people now store a lot of their stuff, such as e-mail, videos and photos, and where people do other work with online applications. Second, with three USB ports it can always be plugged into devices, such as a portable hard drive, to store things locally. Storage space can also be boosted by plugging a small SD-card flash memory (16GB versions are now widely available) into one of two ports, one of which is designated to act as semi-permanent storage.

As for the software, Open Office was surprisingly easy to use—a doddle for anyone who has used Microsoft Office. Moreover, the ability to save work in different formats presented no compatibility problems when sending files to a Windows-based machine. Photo software and other applications were simple to use too. The machine is not up to much for playing games, but then a dedicated games console beats most computers when it comes to games anyway.

The Acer has a built-in webcam, which makes it ideal for video-calling services such as Skype. Admittedly, installing third-party software can be a bit of a fiddle, and some of the advice available online threatens to lure users into the tangled depths of the Linux undergrowth, where few people will want to venture. But as netbooks become more prevalent, such difficulties are likely to ease.

The upshot is that netbooks are great as cheap, simple and small computers for performing basic tasks—especially if the pre-installed software does what you want it to. They will never satisfy power users who want to edit video and play elaborate games, but they are not meant to. Provided they do not expect too much, most users will be delighted with them.

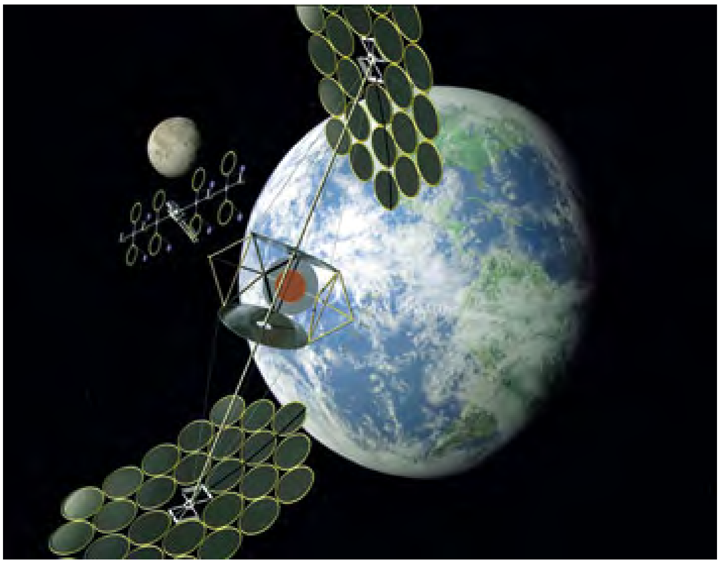
Economist.com SCIENCE TECHNOLOGY QUARTERLY

Space solar power

Let the sun shine in

Dec 4th 2008
From The Economist print edition

Energy: Satellites that beam solar power to earth have often appeared in science fiction. Will they ever become reality?



“REASON”, a short story written by Isaac Asimov that was published in 1941, is set on a space station which collects solar energy from the sun and sends it, via microwave beams, to earth and other planets. The robots that control the beams are under the command of a more advanced model called Cutie, which turns out to have developed its own religion, and ignores the wishes of two astronauts who visit the station. As a solar storm approaches, the humans worry that Cutie will be unable to control the beam sending power to earth, causing it to fall on cities and incinerate them. But in the event, the robot’s religious yearning to keep the power flowing means that no harm is done. The moral: actions matter more than beliefs.

Today it is not just robots in science-fiction tales who are believers in the wonders of space solar power (SSP); the idea also has a small but growing number of human adherents. The basic idea is simple. Light from the sun is the most abundant and cleanest source of energy available in the solar system. Around the clock, 1.3 gigawatts of energy pour through every square kilometre of space around the earth. This energy could be captured by vast arrays of photovoltaic cells mounted on a satellite in orbit around the planet. These solar cells would be illuminated at all times of day, whatever the weather or the season, overcoming one of the main drawbacks of solar power on the earth’s surface. And with no atmosphere in the way to absorb or scatter the incoming sunlight, solar panels in space would produce over five times as much energy as those on the ground. (Some proposals for SSP involve large arrays of mirrors or lenses to concentrate the light onto a smaller array of panels.)

The logical place to put the satellite would be in a geostationary orbit, 35,800 kilometres above the earth’s equator, so that it completes one circuit of the planet per day, and thus appears (from the ground) to hover in a fixed place in the sky, like the communications satellites used to broadcast television signals. The solar-power satellite would send the collected energy down to earth in the form of a microwave beam, which would be picked up on the ground by a huge array of antennae, spread over several square kilometres in open country. The power density of the beam at the receiver would be little greater than what leaks out from a domestic microwave oven, so there would be no danger of incinerating entire cities. Microwave communications links are already used in the telecoms industry without doing any harm to wildlife.

The concept of beaming gigawatts of solar power down from space was first put on a sound scientific footing by Peter Glaser of Arthur D. Little, a consultancy, in 1968. He built on the research of William Brown of Raytheon, an American defence firm, who pioneered the transmission of electric power by microwave beams. Since the oil shocks of the early 1970s, the idea has been dusted off and re-evaluated every ten years or so by America's Department of Energy, its space agency, NASA, and big aerospace companies such as Lockheed Martin and Boeing.

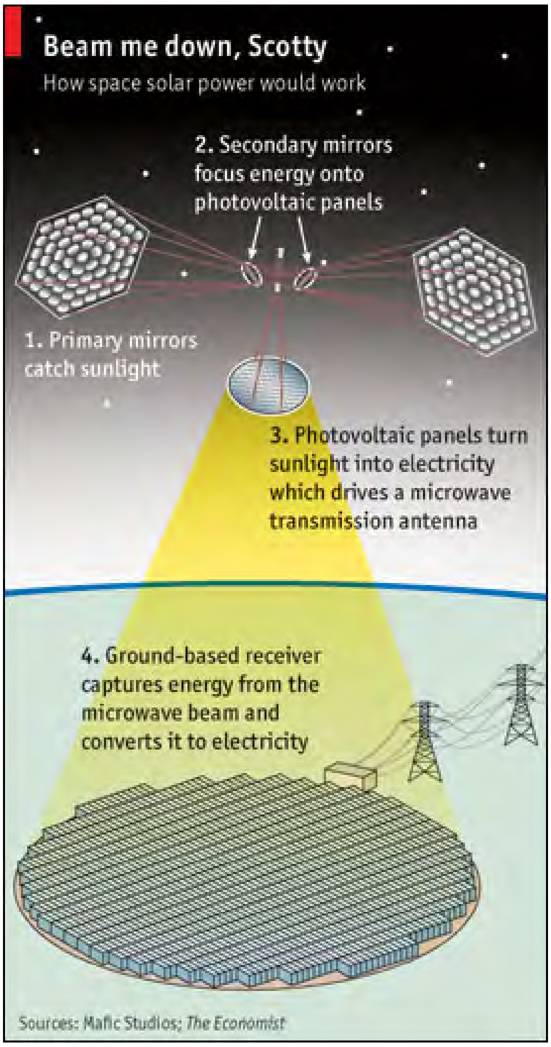
These studies usually conclude that there is no technical barrier to implementing SSP. For example, a study published in 1981 by the Department of Energy, NASA, the Environmental Protection Agency and the Department of Commerce found "no show-stoppers" or "insurmountable obstacles" to the idea. But further development work has always fallen between the cracks of different agencies. "The trouble is that the Department of Energy doesn't do space, and NASA does space, not energy," says Colonel M.V. ("Coyote") Smith of the National Security Space Office (NSSO), a Pentagon think-tank, who recently conducted another study of SSP.

Space solar power is an idea far ahead of its time, but the necessary technology already exists.

Although there may not be any technical difficulty with the idea, the economics are another matter. The main obstacle to SSP is the huge cost of launching the satellites into space. Conventional electricity in America costs between four cents per kilowatt hour (kWh) for hydro-electric power (the cheapest kind) and ten cents for coal-fired generation. Even under the most optimistic scenario, SSP would produce electricity at a cost of around 50 cents per kWh with existing technology. It sounds hopeless. Yet recent developments mean that advocates of SSP are more optimistic than ever before.

Bridging the gap

These developments were not so much technological as geopolitical. The NSSO's recent evaluation of SSP, published in 2007, took a more favourable view of the idea than any previous assessment. Colonel Smith admits that he was sceptical about the idea at first. But he concluded that the Department of Defence was "a potential anchor-tenant customer of space-based solar power", because SSP could provide a much cheaper alternative to existing energy supplies.



The armed forces are America's single greatest consumer of oil. The Department of Defence delivers 1.6m gallons (7.3m litres) of fuel a day—accounting for 70% by weight of all supplies delivered—to its forces in Iraq alone, at a delivered cost per gallon of $5-20. It also spends over $1 per kWh on electric power (ten times the domestic civilian price) in battle zones, because electricity must often be provided using generators that run on fossil fuels.

If some of this fuel could be replaced by power beamed down from space, it could cut costs and reduce the need for complex and vulnerable supply lines, the NSSO report argues. It could be used to power electric vehicles, along with radar stations and other pieces of equipment that currently rely on electrical power from generators. (The study dismisses the notion that the Pentagon might be interested in SSP as a means of beaming death rays down on enemies: it points out that the beam is nowhere near powerful enough to present a plausible alternative to conventional missiles and other weapons.)

Getting SSP off the ground will require the involvement of the private sector, the study observes, but private firms are unlikely to act without a demonstration project to confirm the viability of the scheme. The NSSO estimates that this would cost $8 billion-10 billion, and suggests that it could be funded by a consortium involving America and its allies—such as Canada, Japan, the European Union or Australia, all of which have shown interest in SSP in the past. In the meantime, NASA is evaluating the possibility of an experiment involving the International Space Station.

SSP was one of the original projects in Japan's "New Sunshine Plan" for renewable-energy development after the first oil shock of the 1970s. India is interested because it has a huge problem building a grid that serves the more remote parts of the subcontinent and suffers chronic blackouts. Canada thinks solar power could be used to process the filthy tar-sands deposits of Alberta. Shell, an oil company, has developed a process for refining the dirty tar underground, so that all that comes out is relatively clean oil. But the process needs lots of energy, and the government has ruled out the use of nuclear power.

The optimistic NSSO report was followed in May 2008 by a milestone for SSP, with the transmission of a microwave beam, of the kind that would be used to transmit energy to Earth, between two Hawaiian islands 148 kilometres apart. The distance was chosen because it is equivalent to the thickness of the atmosphere that a microwave beam from space must penetrate. The experiment was carried out by

American and Japanese researchers in only four months, and for less than $1m, under the direction of John Mankins of Managed Energy Technologies, a firm he founded after a long career developing space systems at NASA. The experiment was sponsored by Discovery Communications, a TV company, for a documentary.

Announcing his results, Mr Mankins said that what was needed next was a two-year engineering study of a full SSP system, covering everything from the launch vehicles to the ground receivers. Such a study has not been carried out since the 1980s, and technology has since changed radically. With that done, at a cost of about $100m, the next step would be to develop the necessary architecture to make SSP economically viable, and to test it in low-Earth orbit. Mr Mankins thinks this could be done by 2015, at a cost of less than $1 billion. After that, a full pilot system could be deployed in geostationary orbit, at a cost of $10 billion, and commercial operation could begin by 2025.

There is no doubt that SSP has become far more practical since engineers began evaluating it in any detail. Since 1977 the efficiency of solar cells has increased from around 10% to over 40%, and that of solid-state amplifiers from 20% to over 80%. New lightweight composite materials have been developed. Most striking of all have been the advances in computing and robotics, as demonstrated by the presence of several semi-autonomous rovers on the surface of Mars. An SSP system need not be constructed by astronauts working in an orbiting factory, as was originally assumed, but could be a self-assembling system made up of lots of small parts.

Enter the space entrepreneurs

But there is one area where there has been much less progress, and it remains SSP's Achilles heel: the cost of access to space. For its first half-century, since the launch of *Sputnik* in 1957, space has been largely the province of governments, for which prestige and strategic clout (military rockets) often matter more than cost. But the growth of communications and other services delivered by satellite has spawned a commercial space industry around the world.

A high-flying construction project

George Nield of the Office of Commercial Space Transportation at the Federal Aviation Administration (FAA) points out that the commercial space business, including its suppliers, accounted for over $139 billion in economic activity in 2006—up from $61 billion in 1999. (This covers everything from making launch vehicles and spacecraft to satellite-navigation systems for cars and boats.)

As the industry develops, interest is growing in making cheaper launch vehicles, not least for space tourism, starting with sub-orbital projects. According to the FAA there are about 18 companies involved in developing low-cost launchers. Most (such as Blue Origin, a company founded by Jeff Bezos, an internet tycoon, who is building a spacecraft at a ranch in Texas) are keeping a low profile for the moment. The notable exceptions are Virgin Galactic, founded by Sir Richard Branson, a British entrepreneur intent on taking his aged parents for a holiday in space before too long, and SpaceX, founded by Elon Musk, another internet millionaire.

SpaceX's *Falcon 1* rocket successfully reached orbit at the fourth attempt in September 2008, becoming the first privately funded, liquid-fuelled rocket to do so. The company is developing a much larger rocket, *Falcon 9*, which will be able to carry payloads of up to 12 tonnes into orbit (compared with a few hundred kilograms for *Falcon 1*). SpaceX is one of two companies chosen by NASA to develop crew and cargo resupply systems for the space station. It has also been contracted to launch satellites for a number of

government and commercial clients.

Mr Musk thinks his non-bureaucratic, low-cost approach could reduce the cost of launching payloads into low-earth orbit from around $6,000-10,000 per kilogram today to around $3,000 with *Falcon 9*, and eventually (by reusing more of each launcher) to around $1,000. Mr Musk has his eye on manned missions to Mars, among other things, but much lower launch costs would also have the side-effect of making SSP more viable. The NSSO estimates that a launch cost of $440 per kilogram, for example, would reduce the cost per kWh to between eight and ten cents.

One company with a specific plan for SSP is Space Island Group, based in California. Its novel scheme involves using the technology that has already been developed by NASA for the space shuttle to build orbiting space-stations out of the empty fuel tanks that are usually discarded when the shuttle reaches orbit. Space Island's plan is to launch several of these tanks, convert them into living quarters and rent them out. Gene Meyers, the boss of Space Island, says it has identified 200 companies and 300 university research groups which would be interested in renting facilities at its proposed rates; there would also be opportunities for space tourism. The resulting revenues, the company says, would cover the cost of launching the components for a large SSP system, piggybacked onto each fuel tank. It sounds rather far-fetched—but the same was true of Mr Musk's plans just five years ago, before he had launched a single rocket. That is an indication of how quickly things can change in the commercial space industry.

When Mitsubishi Electric started looking at solar power in Japan it, too, was thinking along the lines of launching giant structures and assembling them in space. After a while it balked at the difficulty and cost of that route, and in recent years it has been concentrating on the idea of launching squadrons of small satellites orbiting in formation. Mitsubishi Electric has continued to invest in SSP research, and Japan's space agency, JAXA, is also taking the idea seriously, with talk of a working system in orbit by 2030.

If today's gloomy economic conditions make SSP seem even more outlandish, it is worth remembering that America's commercial-aviation industry was born in the midst of the Depression. The 1930s witnessed the formation of aerospace companies such as Grumman and Hughes, the launch of airlines such as American and United and the birth of the Douglas DC-3—the workhorse of the pre-jet age, which is still going in some corners of the world.

Space solar power is still an idea far ahead of its time. But the necessary technology already exists and is gradually falling in cost. The commercialisation of space—and, in particular, the enthusiasm building around space tourism—could be the trend that brings down launch costs and brings SSP within reach. It will take entrepreneurs as well as engineers to kick-start the public-private process needed to tap the energy of the great fusion reactor in the sky. Lots of people believe it can be done. But as Cutie the robot demonstrated, what you believe matters less than what you actually do.

Cyberwarfare

Marching off to cyberwar

Dec 4th 2008
From The Economist print edition

The internet: Attacks launched over the internet on Estonia and Georgia highlight the difficulty of defining and dealing with "cyberwar"

AS RUSSIAN tanks rolled into Georgia in August, another force was also mobilising—not in the physical world, but online. Russian nationalists (or indeed anyone else) who wished to take part in the attack on Georgia could do so from anywhere with an internet connection, simply by visiting one of several pro-Russia websites and downloading the software and instructions needed to perform a "distributed denial of service" (DDoS) attack. This involves sending a flood of bogus requests to an internet server, so that it is overwhelmed by the demand and becomes unusable.

One website, called StopGeorgia, provided a utility called DoSHTTP, plus a handy list of target websites, including those of Georgian government agencies and the British and American embassies in the capital, Tbilisi. Launching an attack was as simple as entering the address and clicking a button labelled "Start Flood". The StopGeorgia website helpfully indicated which target sites were still active and which had collapsed under the weight of bogus requests. Other websites explained how to write simple programs to send a flood of requests, or offered specially formatted webpages that could be set to reload themselves continuously, deluging particular Georgian websites with traffic.

The actual damage done was minimal: some e-mail was disrupted and some target sites were rendered unavailable to the public. The cyberattacks on Estonia in 2007, also launched from Russia, were more effective because Estonia's government relies far more heavily on the internet (its parliament declared internet access a human right in 2000). They briefly upset the operations of some government organisations, including telephone access to the emergency services.

There is no conclusive evidence that either set of attacks was executed or sanctioned by the Russian government—though there is no evidence that it tried to stop them, either. Ethan Zuckerman, an internet expert at Harvard, has described the plethora of competing theories as "the fog of cyberwar". And in the Georgian case volunteer cyberwarriors—dubbed "a citizen DDoS army" by Artem Dinaburg of Damballa, a cybersecurity start-up—were also involved. Does any of this really count as an act of war? The Estonian and Georgian cyberattacks have put to the test a host of theories about cyberwarfare: how to define it; whether to engage in it; and how to defend against it.

A definition of war

The discussion of cyberattacks and cyberwarfare is complicated by widespread disagreement over how to define these terms. Many cyberattacks are really examples of vandalism or hooliganism, observes Bruce Schneier, a security guru who works for BT, a British telecoms operator. A cyberattack on a power station or an emergency-services call centre could be an act of war or of terrorism, depending on who carries it out and what their motives are.

For a cyberattack to qualify as "cyberwar", some observers argue, it must take place alongside actual military operations. Trying to disrupt enemy communications during conflict is, after all, a practice that goes back to the earliest telecommunications technology, the telegraph. In 1862, for example, during the

American Civil War, a landing party from *Thomas Freeborn*, a Union navy steamer, went ashore to cut the telegraph lines between Fredericksburg and Richmond. The Russian navy pioneered the use of radio jamming in the Russo-Japanese war of 1905. On this view, cyberattacks on infrastructure are the next logical step. The attacks on Georgia might qualify as cyberwarfare by this definition, but those on Estonia would not, since there was no accompanying military offensive in the real world. As Mr Schneier puts it: “For it to be cyberwar, it must first be war.”

Not everyone agrees. For years there has been talk of a “digital Pearl Harbour”—an unexpected attack on a nation’s infrastructure via the internet, in which power stations are shut down, air-traffic control is sabotaged and telecoms networks are disabled. There have even been suggestions that future wars could be waged in cyberspace, displacing conventional military operations altogether. Why bomb your enemy’s power-stations or stockmarkets if you can disable them with software? So far there have been no successful attacks of this type, but that does not stop people worrying about them—or speculating about how to launch them.

The strongest definition of cyberwar requires that cyberattacks cause widespread harm, rather than mere inconvenience. The Georgian attacks did not cause physical harm, unlike the military operations going on at the same time.

The United Nations Charter does not spell out what counts as “the use of force” in cyberspace.

Such definitions matter because cybervandalism or cyberhooliganism are forms of cybercrime, which (in theory at least) is dealt with by various national and international law-enforcement agencies according to existing legal conventions, such as the Council of Europe Convention on Cybercrime. A private individual in Russia who defaces an Estonian website ought to be treated in a similar fashion to his neighbour who travels to Tallinn, breaks a shop window and goes into hiding in Russia—though identifying a cyberattacker is far from easy and after the attacks in 2007 the Russian authorities refused to co-operate with Estonian investigators.

Such was the intensity of the attacks on Estonian websites, however, that the country’s defence minister, Jaak Aaviksoo, warned that the action “cannot be treated as hooliganism, but has to be treated as an attack against the state”. But treating the attacks as acts of war would mean applying a different set of rules, presenting a new challenge to policymakers.

All sorts of “translation problems” arise when trying to apply existing international rules relating to terrorism and warfare to online attacks, says Duncan Hollis, a professor of law at Temple University in Pennsylvania. The United Nations Charter prohibits the use of force except when authorised by the Security Council, for example, but does not spell out what counts as “the use of force” in cyberspace. Do DDoS attacks count? Perhaps not if aimed at a newspaper website, but what about an air-traffic control system?

Agreement on a definition is needed, says Mr Hollis, because under international law a country that considers itself the victim of an act of war has the right to self-defence—with conventional military (not merely electronic) means. And members of an alliance with mutual-defence obligations, such as NATO, may be duty-bound to respond to an attack on any of their members. So the cyberattack on Estonia, a NATO member, could in theory have prompted a military response. To grapple with questions like these, and to bring together a group of experts in “cyberdefence”, NATO has set up a research centre in Tallinn, which is already open but will be formally inaugurated in 2009.

Mr Hollis points out that the debate about how best to classify cyberattacks has much in common with the debate about terrorism. Should terrorism be treated as a crime, as an act of war, as both at once, or as something entirely different that requires new laws? He favours this last approach for cyberattacks because it avoids the translation problems that arise when applying existing rules to such attacks, and because those rules are themselves somewhat outdated, given that attacks (in the real world and online) may come from non-state actors such as terrorist groups. Mr Hollis proposes a new “international law for information operations” to alleviate the uncertainty. He concedes that there is unlikely to be international consensus in this area soon, but argues that it would be a big step in the right direction if a group of states such as NATO, or the OECD club of industrialised nations, agreed to be bound by a clear set of rules.

What effect such co-operation would have on containing anonymous and unofficial cyberwarriors is hard to say; the fight against real-world terrorism does not offer much hope. And it is attacks from such groups that some researchers are most worried about. John Robb, a military futurist, calls the spontaneous, bottom-up mobilisation of volunteer cyberattackers in the Georgian conflict an example of "open-source cyberwarfare".

This approach has several advantages over centralised, state-directed cyberattacks, he says. Leaving the attacks to informal cybergangs (the extent of the Russian state's involvement remains unclear), rather than trying to organise a formal cyberarmy, is cheaper, for one thing. The most talented attackers, with the best tools, might not want to work for the state directly. Best of all, from the state's point of view, is that it can deny responsibility for the attacks. It is the online equivalent of the use, by some governments, of gangs and militias to carry out attacks on political opponents or maintain control in particular regions.

Send in the botnet

There is no consensus among conventional military types about how to deal with such cyberattackers. Writing in *Armed Forces Journal* in May, Colonel Charles Williamson, of the intelligence and surveillance division of America's air force, proposed that the United States should establish its own "botnet"—a network of machines "that can direct such massive amounts of traffic to target computers that they can no longer communicate and become no more useful to our adversaries than hunks of metal and plastic." America, he wrote, "needs the ability to carpet-bomb in cyberspace to create the deterrent we lack." The botnet could be built out of obsolete computers that would otherwise be discarded, he suggested. But he conceded that there would be legal and political difficulties associated with its use.

Mr Robb is sceptical of the ability of formal military organisations to wage cyberwarfare. "A few top people with the right tools can do the work of thousands of less capable people, so it's better not to waste the money on 40,000 uniformed personnel dedicated to a bureaucratic and lethargic cyber command," he says. And after an attack from an informal, self-organised group, there is no clear target to strike in any case. It may make more sense for existing military bodies to concentrate on defence, by identifying the most vulnerable parts and working out how to protect them. "Anything they can do to us, we should be able to counter faster—that's the appropriate deterrence paradigm for this cyberage," says Thomas Barnett, a military strategist at Enterra Solutions, a technology firm. "We should concentrate on making ourselves resilient."

One way for governments to do this, says Richard Bejtlich, a former digital-security officer with the United States Air Force who now works at GE, an American conglomerate, might be to make greater use of open-source software, the underlying source code of which is available to anyone to inspect and improve. To those outside the field of computer security, and particularly to government types, the idea that such software can be more secure than code that is kept under lock and key can be difficult to accept. But from web-browsers to operating systems to encryption algorithms, the more people can scrutinise a piece of code, the more likely it is that its weak spots will be found and fixed. It may be that open-source defence is the best preparation for open-source attack.

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Case history

Wind of change

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Energy: Wind power has established itself as an important source of renewable energy in the past three decades. The basic idea is ancient, but its modern incarnation adds many new high-tech twists

Corbis

OLD-FASHIONED windmills, no longer used to grind flour, have become tourist destinations in much of the developed world. Most people would agree that wooden windmills fit pleasingly into the landscape, and are charming reminders of a simpler, agrarian past. But opinion is divided about their high-tech descendants, wind turbines, which are springing up across the world as a source of renewable electricity. To some they are a blight on the landscape; to others they are graceful, majestic structures that signal the shift towards new sources of energy.

The first wind farms sprouted in California in the early 1980s, beneficiaries of generous tax credits. Among the rolling hills of Altamont Pass, near San Francisco Bay, some early turbines can still be seen spinning, turning a portion of the wind's kinetic energy into electricity. With capacity of mere tens of kilowatts and a rotor diameter of 15 metres or so, these windmills are no giants, at least by today's standards. New machines typically have a capacity of 1.5-2.5 megawatts (MW), or 30 to 50 times that of the early Altamont Pass turbines, with rotor diameters as great as 100 metres, so that their blades sweep an area about the size of a football field.

The wind-power industry has come a long way since the first Altamont Pass turbines started to spin. Although wind generates only about 1% of all electricity globally, it provides a respectable portion in several European countries: 20% in Denmark, 10% in Spain and about 7% in Germany. Wind power is also on the rise in America, where capacity jumped by 45% last year to reach nearly 17 gigawatts (GW) at the end of 2007. In China the pace has been faster still. Since the end of 2004, the country has nearly doubled its capacity every year. Globally, wind power installations are expected to triple from 94GW at the end of 2007 to nearly 290GW in 2012, according to BTM Consult, a Danish market-research firm. They will then account for 2.7% of world electricity generation, the company predicts, and by 2017 their share could be nearly 6%.

Wind power is attractive because it is a widely available and renewable source of energy that produces neither pollution nor climate-changing greenhouse gases. Once the turbines have been installed, the only

“fuel” they need is the wind. And global wind resources are so vast that they could easily meet the world’s current energy needs, at least in theory. According to a study by researchers at Stanford University, global wind-energy potential in 2000 was about 72,000GW—nearly five times the world’s total energy demand.

What is more, the technology needed to tap into this source of energy is getting cheaper: the cost of generating electricity from wind power has fallen from as much as 30 cents per kilowatt hour in the early 1980s to around ten cents in 2007. Various incentives, in the form of tax credits and feed-in tariffs, mean that wind power is already cost-competitive with electricity derived from natural gas and even coal in many markets. With a tax of $30 per tonne of carbon dioxide, says Maria Sicilia of the International Energy Agency (IEA), electricity produced from wind could compete with fossil fuels in most markets even without subsidies.

Even without a price on carbon emissions, the growth of wind power is likely to continue. To combat climate change, the European Union has set itself the goal of deriving 20% of its energy from renewable sources by 2020, with a large portion coming from wind power. In America, a recent report by the Department of Energy laid out a plan to reach 20% wind power by 2030. And these ambitions may be dwarfed by Asia, which seems likely to become the biggest market for new wind installations within five years.

The rush to erect wind turbines has filled manufacturers’ order-books for the next year or two. But there are difficulties ahead. The wind does not blow all the time, and when it does, it often blows far away from cities that need electricity. For wind to continue its remarkable expansion, the industry will need to build new transmission lines and improve the integration of wind power into the grid. And because it is still dependent on subsidies, the industry remains vulnerable to the risk that incentives might suddenly be cut off (at least until a price is imposed on carbon emissions). In addition, some people remain to be convinced that wind farms make good neighbours.

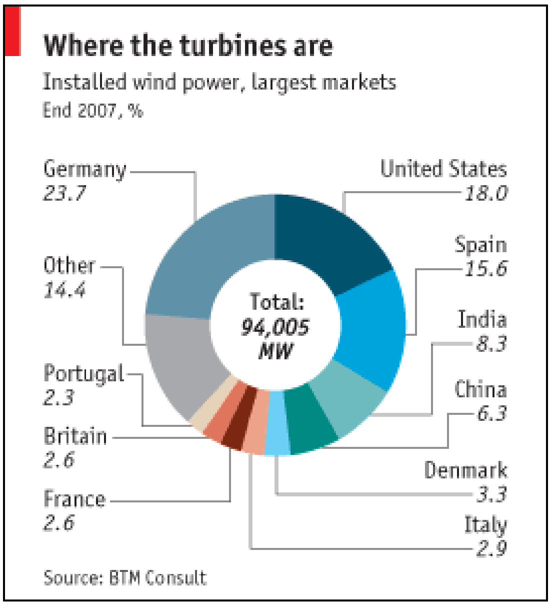
Why the wind blows

When sunlight heats the Earth, it also heats the atmosphere. As hot air rises, cooler, heavier air rushes in to fill its place—thus creating wind. For more than 2,000 years people have captured this energy with windmills and used it to do useful things, such as grind grain or pump water. By the late 19th century, windmills were also being used to produce electricity, mostly in rural areas.

Compared with traditional windmills, however, modern wind turbines are far more efficient. Their rotors are pointed into the wind under computer control, and their blades exploit the phenomenon of aerodynamic “lift” that keeps aeroplanes in the air. Turbine blades are shaped like aerofoils, with one side curved and the other almost flat. This shape causes the air to flow more quickly over the curved side than the flat side, and the fast-moving air results in an area of low pressure on the curved side of the blade, which causes the blade to move and the rotor to turn. The blades are attached to a rotor hub, which is in turn connected to a drive shaft. But this shaft spins quite slowly, so a gearbox is used to get the drive shaft to turn a second shaft at a much higher speed, suitable for spinning a generator to produce electricity. In a wind farm, the electricity from multiple turbines is collected and fed into the grid.

Modern wind power got started after the first oil crisis in 1973, when countries began to look for ways to generate energy from sources other than fossil fuels. Denmark, which was almost entirely dependent on foreign oil for its electricity, was hit particularly hard. But it had one abundant potential energy resource: wind. So, in the mid-1970s, the country embarked upon an ambitious research project to develop the technology.

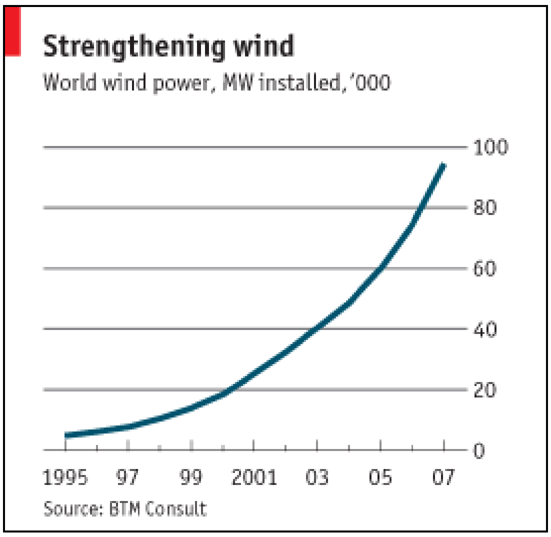
America also began research on wind turbines. With funding from the government, large organisations such as Boeing, an aerospace giant, and NASA, America’s space agency, began designing large, multi-megawatt machines. Because bigger machines with larger rotors sweep a larger area, they can collect more energy from the wind. But many of these big turbines were expensive to operate and maintain.



Entrepreneurs and start-ups also began tinkering with designs that appeared on the American market in the late 1970s and early 1980s. Those machines were much smaller, and there was a wide variety of them, including models with two-bladed rotors spinning about a horizontal axis, and vertical-axis machines. The Danes also experimented with different designs, but by the early 1980s a standard Danish architecture had emerged: the three-bladed, horizontal-axis, upwind machine.

Many of the early turbines had drawbacks. “The vertical-axis machines were not as aerodynamically efficient as the horizontal-axis machines, so they had to sweep out more area to capture the same amount of power and energy,” notes Sandy Butterfield, chief engineer at the National Wind Technology Center in Colorado. (Vertical-axis designs are better at coping with variations in wind direction, but their blades are moving against the wind half the time.) Two-bladed rotors also had some disadvantages. Because they are not as dynamically balanced as three-bladed rotors, they are harder to design. They also typically spin faster to extract a similar amount of energy as three-bladed designs, which makes them noisier. And people prefer the look of three-bladed rotors.

The main difference between the American and the Danish designs was that the American machines were structurally softer. “American designs were typically intended to bend with the wind,” explains Robert Poore of DNV Global Energy Concepts, a consultancy based in Seattle. Danish machines, by contrast, tended to be rigid and weighed about twice as much. In the early days engineers knew little about the impact of fluctuating winds on turbine structures, and the softer American designs tended to come apart under heavy loads.



Even though the technology was in its early stages, California installed more than 1.2GW of wind power, then almost 90% of global capacity, in the first half of the 1980s—an era that has come to be known as the great “wind rush”. The rush was driven by a combination of federal tax credits and generous state incentives for wind power. Previously, wind turbines had been installed as single machines or in small

clusters. But during the boom, turbines began to be installed in large arrays, or "wind farms". When the tax credits expired in the mid-1980s, however, America's wind-power industry came to a grinding halt. Many companies went bankrupt, and even some of the Danish firms, such as Vestas, fell on hard times, because they had come to rely on exports to California. But the Danish three-bladed design had emerged as the industry standard—though much work remained to be done to optimise the machines.

In the early days, wind turbines operated only at fixed speeds. If the wind became too strong, a simple mechanism prevented the blades and rotor from turning any faster. A limitation of this design was that the rotor had to be able to cope with wind fluctuations without being able to adjust its speed, putting enormous stresses on the blades and drivetrain. And to start with, knowledge about the impact of gusts on turbines was limited. To cope with the uncertainty, Danish engineers designed turbines conservatively, making them very heavy for their size.

Spin doctoring

Over the years, however, scientists at Denmark's Risø National Laboratory and other research institutions conducted tests which helped them develop mathematical models that could predict how the components would be affected by stretching, bending and vibration. This enabled engineers to optimise the machines and reduce their weight. By the late 1980s components started to become much lighter, allowing companies to scale up their turbines while keeping weight gain to a minimum.

Around the same time, researchers also started developing ways to manage and reduce the effect of gusts. Turbines equipped with variable "pitch" could adjust the angle of their blades and limit the force with which the wind was able to act on the rotor and the drivetrain, reducing wear and tear. This system worked even better in conjunction with variable-speed turbines, which were developed in the early 1990s. Such machines operate at high efficiency over a wider range of wind speeds, converting more of the wind's kinetic energy into electricity and allowing the rotor to adjust its speed to that of the wind, thus further reducing the impact of gusts on turbine structures.

All these advances have allowed manufacturers to produce ever-larger machines and to build turbines with longer blades for a given output rating. This has several benefits. Since longer blades sweep a larger area and capture more energy from the wind, the turbine produces its rated amount of power at lower wind speeds, and will therefore run at its rated power a higher percentage of the time. And because the drivetrain does not have to be scaled up, the turbine generates more energy for a given cost.

Global wind resources are so vast that they could easily meet the world's current energy needs.

Today's machines extract around 50% of the kinetic energy in the wind—close to the theoretical limit of 59%. However, the scaling up of machines and their components has also caused problems, in particular with gearboxes, which are exposed to lots of vibrations and movements inside the turbines, explains Flemming Rasmussen, head of aeroelastic design at Risø's Wind Energy Department. Enercon, a German firm, has developed a "direct-drive" system with a generator that can operate at low rotational speeds and does not require a gearbox. The problem with that approach is that such generators are very heavy, and tend to be more expensive. The jury is still out on whether this approach is superior, industry insiders say.

Size is everything

Despite some difficulties in transporting, deploying and maintaining large turbines, the industry still believes that bigger is better. Onshore machines are creeping up to about 3MW in capacity, and some offshore turbines on the drawing board are more than twice as powerful. Clipper Windpower, for example, is building a 7.5MW prototype that may turn into a 10MW machine once it reaches commercial production. "When you've spent the money to put in a very expensive foundation in the seabed, it pays to put the largest piece of equipment on top of it which you possibly can," notes Mr Butterfield.

Eyevine

Offshore installations cost around 40% more than onshore ones, which is one reason why only about 1% of wind power is generated offshore at the moment. But Robert Thresher, wind-research fellow at America's National Renewable Energy Laboratory, believes offshore wind has huge potential. Its capacity is expected to increase from 1.1GW in 2007 to 8.2GW in 2012.

If carefully chosen, offshore sites can offer higher wind speeds and less variation. Offshore farms can be positioned near densely populated areas where power is needed. They can also be positioned so that they can barely be seen from land and cannot be heard, which may spark less opposition. (In America many proposed offshore projects have run into resistance from locals who do not want turbines to clutter up the horizon, but in Europe about 20 offshore farms are already operating and many more are planned.) This could set the stage for a comeback by noisier two-bladed designs. According to studies at Risø, two-bladed designs could be about 15% cheaper than equivalent three-bladed turbines.

Wind power has made great progress, but the industry faces new growing pains. “Before it was a one-front war: we had to improve the technology,” explains Dr Thresher. Now that turbines have evolved into sophisticated machines with elaborate control systems, new problems have come into view beyond simply improving their performance. One of these is the need to win greater public acceptance for the technology. As well as complaining that wind turbines spoil the view or make too much noise, opponents of wind turbines also worry about the danger they pose to birds. (Proponents respond that many more birds are killed annually by cats, vehicles and buildings.)

But perhaps the greatest obstacle to the wider adoption of wind power is the need to overhaul the power grid to accommodate it. Transmitting wind power from rural areas with strong winds to populated areas with high demand will require expensive new transmission lines. In addition, the power grid must become more flexible, though some progress has already been made. “Although wind is variable, it is also very predictable,” explains Andrew Garrad, the boss of Garrad Hassan, a consultancy in Bristol, England. Wind availability can now be forecast over a 24-hour period with a reasonable degree of accuracy, making it possible to schedule wind power, much like conventional power sources.

Still, unlike electricity from traditional sources, wind power is not always available on demand. As a result, grid operators must ensure that reserve sources are available in case the wind refuses to blow. But because wind-power generation and electricity demand both vary, the extra power reserves needed for a 20% share of wind are actually fairly small—and would equal only a few percent of the installed wind capacity, says Edgar DeMeo, co-chair of the 20% wind advisory group for America’s Department of Energy. These reserves could come from existing power stations, and perhaps some extra gas-fired plants, which can quickly ramp up or down as needed, he says. A 20% share of wind power is expected to raise costs for America’s power industry by 2%, or 50 cents per household per month, from now until 2030.

Whether or not the 20% goal is reached in America, wind power is poised to make a significant contribution to curbing greenhouse gas emissions. In America alone, about 35% of new electricity-generating capacity in 2007 came from wind power. The IEA projects that by 2030 wind power will produce 14% of the electricity in the European Union, accounting for 60% of its growth in electricity generation (though additional policy measures could increase this share even further). From a zero-fuel-cost, zero-carbon perspective, notes Victor Abate, vice-president of renewables at GE Energy, wind power is currently the most cost-effective and scalable technology available to mankind.

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Internet overload

Surviving the exaflood

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The internet: Predictions that an "exaflood" of traffic will overload the internet have been doing the rounds. But will it really happen?

VIDEO killed the radio star. Might its next victim be the internet? The popularity of YouTube, BitTorrent and other online-video services has prompted many gloomy prophesies that the net is on the verge of collapsing under the load. Starting the ball rolling was Brett Swanson of the Discovery Institute, a think-tank, who warned in early 2007 of a coming deluge of data that "today's networks are not remotely prepared to handle", and used a catchy name for it: the "exaflood". (An exabyte is 10^{18} bytes, or one billion gigabytes.)

Nemertes, a market-research firm, issued a warning in November 2007 that "user demand for the internet could outpace capacity by 2010", and speculated that this would both inconvenience users and hamper innovation. In May 2008, at a symposium to discuss the matter held by the Internet Innovation Alliance, an industry body, there was further talk of imminent overload, and a warning that a lack of internet bandwidth posed a serious risk to American competitiveness—unless tens of billions of dollars were quickly invested in infrastructure. The global cost of upgrading the internet to prevent a decline in service has been put by Nemertes at $137 billion; network operators in North America, it says, are spending 60-70% less than they should be to keep pace with demand.

All this may sound familiar. Back in 1995 Bob Metcalfe, an internet guru and the founder of 3Com, a network-equipment maker, predicted in a magazine article that the internet would suffer "gigalapses" and grind to a halt by the end of 1996. He promised to eat his words if it did not. His gloomy prediction was proved wrong, and in 1997 he duly put the offending article in a blender with some water at an industry conference, and ate the resulting pulp with a spoon. If such an eminent figure (the inventor of Ethernet networking, no less) can get it wrong, why should anyone be worried this time around?

Mr Swanson, who now works at the Progress and Freedom Foundation in Washington, DC, points to several new technologies that are capable of generating extremely large quantities of traffic, including video-sharing sites, videoconferencing, movie downloads, online gaming, internet-protocol television, camera-phones, remote medical-imaging and back-up services that store documents online. All, he says, are “swelling tributaries funnelling into the exaflood”. Doom-mongers like to quote the statistic that YouTube alone generated more internet traffic in 2006 than the entire internet did in 2000. John Chambers, the chief executive of Cisco, a network-equipment giant, has predicted that internet traffic could grow at an annual rate of 200-300%, and possibly 300-500%, over the next few years.

Not so fast

It all sounds worrying. But according to Andrew Odlyzko, a computer scientist at the University of Minnesota who specialises in analysing historical trends in networking, the actual rate of traffic growth is much lower than this—and seems to be decreasing, not increasing. Dr Odlyzko concedes that it is difficult to get concrete data on the subject. “Service providers are paranoid about releasing traffic statistics,” he says. Even so, the Minnesota Internet Traffic Studies (MINTS) project, which Dr Odlyzko heads, shows a clear decline in traffic growth compared with previous years. MINTS collates information about traffic growth from a range of sources, such as company statements, log files from websites and traffic reports from internet exchanges where traffic is passed from one network to another. “Back until about five years ago, we had a pretty regular 100% per year growth rate—but today it’s more like 50-60%,” says Dr Odlyzko.

This chimes with anecdotal evidence from a number of internet-service providers that has been assembled by MINTS. AT&T, the world’s biggest telecoms company, says traffic on its backbone is growing “at a pace of more than 50% per year”. Virgin Media, a British internet-service provider, says traffic on its broadband network is growing by 57% a year. “In spite of the widespread claims of continuing and even accelerating growth rates, internet traffic growth appears to be decelerating,” the MINTS site concludes.

Of course, looking at traffic growth in isolation is meaningless without considering capacity. After all, a 50% increase in traffic will overload the network eventually unless capacity is growing at least as quickly. According to figures released recently by TeleGeography, a consultancy based in Washington, DC, international traffic growth exceeded capacity growth for several years after 2002. That is not surprising, because a glut of long-haul capacity was left over in the aftermath of the dotcom crash. But in 2007 and 2008, capacity grew faster than traffic, as investment picked up.

Too little internet traffic could prove to be more dangerous to the industry than too much.

Talk of exafloods is nothing less than scaremongering and has no bearing on reality, even though video traffic is increasing substantially, says Grant van Rooyen of Level 3, a company based in Broomfield, Colorado. It operates network backbones that carry around a quarter of the world’s internet traffic. “We estimate that 50-60% of traffic today is video, but it’s been that way for the last three to four years,” he says. “We really don’t think we’re going to see a massive failing of the infrastructure.”

Level 3 has been regularly upgrading its capacity, and will continue to do so, says Mr van Rooyen. “This isn’t like building a toll-road with an inflexible infrastructure,” he says. “In the network world, we are able to scale infrastructure and capacity in real time.” When bunches of optical fibres are laid in the ground or on the seabed, for example, not all of them are immediately used, or “lit”. So the capacity of a link can be increased by lighting more fibres. Even when all the fibres are lit, capacity can be further increased by upgrading the equipment at each end of the fibre. Technological progress means the amount of information that can be squeezed down each fibre is steadily increasing.

Core blimey

Such confidence is encouraging, but upgrading capacity in the backbone—Level 3’s area—is no use unless the “last mile” links, which connect homes and offices to the core network, are upgraded too. This has been the bottleneck in internet capacity in the past: the dotcom crash can be blamed, in part, on over-optimistic projections about the rate at which broadband last-mile links would become widely available. And because the last mile consists of millions of short-haul links, rather than a few dozen long-haul ones, it tends to be more expensive and time-consuming to upgrade than backbone infrastructure, says Dr Odlyzko. Furthermore, the popularity of “peer to peer” (P2P) file-exchange systems, from Napster to Gnutella to BitTorrent, puts particular pressure on the last mile, because P2P systems draw content away

from the core to the edges of the internet, where bandwidth is most precious. Is this where the exaflood will strike?

In fact, in the past couple of years there has been substantial investment in last-mile infrastructure around the world. In many countries telecoms operators have been converting some of their last-mile connections to high-speed fibre-optic links, though cable networks and telephone wires still account for most last-mile connections. But they too can be upgraded to carry more traffic. In many countries, broadband suppliers have invested in their networks as they compete to offer the fastest connections. Continuing investment is needed, says Mr van Rooyen, "but we believe this is solvable."

At the same time, pressure on the last-mile links appears to be abating, says Alan Mauldin of TeleGeography. "We are seeing P2P growth slowing," he says, largely due to the availability of better video-compression software and the rise of websites such as YouTube, which offer much easier access to video than P2P does. "We'd only be flooded if carriers stopped adding capacity—and there's no reason or evidence to suggest that they will," says Mr Mauldin. Existing levels of investment, Dr Odlyzko reckons, should be enough to keep pace with traffic growth.

This is all good news, says Mr Swanson, who, with his former colleague George Gilder of the Discovery Institute, is credited with coining the term "exaflood". "The notion of flood conjures up notions of catastrophe," he says. "But in the world of technology it can also refer to abundance." Mr Swanson says his concern has always been that not enough investment was being made in the last mile, and that "draconian" regulations, such as a proposed "net neutrality" law, would discourage America's operators from investing in their networks, leading to capacity shortages and hampering innovation and competitiveness. "We didn't mean it to be alarmist," he says. "We weren't getting enough fibre into the home."

And this, it seems, is the source of exaflood doom-mongering. Warning of impending overload is a convenient flag to wave if you are a think-tank, industry lobby or company trying to fend off government regulators or attract tax-breaks and subsidies for network construction. Raising the prospect of an exaflood also makes sense for companies that sell network hardware or software that could prevent the supposed disaster from happening.

From flood to drought

Panic over, then? Not quite. Perversely, the real threat may come from a reduction in internet-traffic growth, says Dr Odlyzko. Too little internet traffic, he contends, could prove to be more dangerous to the industry than too much. A traffic-growth rate of 50%, combined with steady declines in equipment costs, means revenues are stagnant, "which is hardly a cheering prospect for the industry". If traffic growth continues to fall—it is already below 10% in Hong Kong, where high-speed access is abundant—there will

be slowing demand for faster connections from operators and new equipment from vendors. But if compelling new applications drive the growth rate back up to 100%, its level for many years, there will be more demand from customers for new services and equipment. Accordingly, says Dr Odlyzko, the industry should be looking for ways to stimulate traffic growth, rather than limit it.

The exaflood has, in any case, already washed over the internet: according to figures from MINTS, global internet traffic is somewhere between five and eight exabytes per month, or 60-100 exabytes a year. Mr Swanson has duly amended his PowerPoint presentation. He forecasts that annual internet traffic in America alone could exceed 1,000 exabytes, or 1 zettabyte, by 2015 and has upgraded his terminology accordingly: he now talks of a zettaflood.

This is more traffic than current trends would suggest. Mr Swanson says his aim is not to worry people, but to encourage the investment and innovation that will be needed to handle so much traffic. And if the zettaflood fails to materialise? “I don’t plan on eating my PowerPoint,” he says.

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Clean technology

Masdar plan

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From The Economist print edition

Environment: Abu Dhabi has embarked upon an ambitious plan to build a zero-emission clean-tech centre in the desert. Will it work?

THE world's grubbiest people, measured by emissions of greenhouse gases per head, are the citizens of the United Arab Emirates. The country's huge oil wealth allows many of them to drive big, fuel-guzzling cars and live in huge, power-guzzling homes. What is more, the country's hot and muggy climate means that almost all the buildings are air-conditioned, and almost all the water is obtained from energy-intensive desalination plants. The result is an offence to the atmosphere.

What is more, Abu Dhabi, the biggest of the country's seven princely city-states, has a huge vested interest in the continued domination of the world economy by fossil fuels. It sits atop some 8% of the world's proven reserves of oil. At current rates of extraction, the oil will last for another 92 years. So it is with some scepticism that the world has greeted Abu Dhabi's plans to reinvent itself as a crucible of greenery.

In 2006 Abu Dhabi's development agency unveiled the Masdar Initiative, to pursue "solutions to some of mankind's most pressing issues: energy security, climate change and truly sustainable human development". The initiative consists of a research institute to develop environmental technologies, an investment arm to commercialise and deploy them, and an eco-city to house these two outfits and to serve as a test-bed for their ideas. All this, it is hoped, will turn Abu Dhabi into the Silicon Valley of clean technology, where green-minded academics, entrepreneurs and financiers will rub shoulders.

Thinking big

The project is nothing if not ambitious. Masdar's managers say they will create an academic institution on a par with the Massachusetts Institute of Technology (MIT), a global manufacturing hub for technologies such as solar power and desalination, and a city of 40,000 people with no greenhouse-gas emissions and no waste—all while turning a profit. The government of Abu Dhabi is putting up $15 billion in seed capital, but the investment arm and Masdar city are intended to be run on a commercial basis, in conjunction with other companies.

In the past, some of Abu Dhabi's grandiose schemes have come to nought—most notably a plan to build a global financial hub from scratch a decade ago. More recently, developers have suggested that they might scale back other splashy projects, such as a huge new cultural quarter. But Masdar is proceeding apace. Abu Dhabi's crown prince, Sheikh Mohammed al-Nahyan, was excited about the idea from the start and is taking a personal interest in its progress, says Sultan al-Jaber, Masdar's boss.

Masdar Institute of Science and Technology (MIST) will admit its first students next year; the first phase of Masdar city is under construction and Masdar has built up a big portfolio of renewable-energy investments, including a stake in an offshore wind farm in Britain and three solar-thermal power plants in Spain. It has also placed an order for machinery for two solar-panel plants: one that is already under construction in Germany, and another that is to be built in Abu Dhabi itself.

Outsiders seem keen to get involved. MIT is helping MIST with the recruitment and training of its faculty. Credit Suisse, a Swiss bank, has invested $100m in the initiative's clean-tech fund—the same amount as Masdar itself. Foster + Partners, a British architecture firm, has come up with the master-plan for Masdar city. BP, a big oil firm, and Rio Tinto, a mining giant, will collaborate on a carbon-capture and storage scheme. Masdar is working with such partners not because it lacks capital, says Mr al-Jaber, but because it wants to take advantage of foreign expertise and have its ideas independently scrutinised.

It is Masdar city that has attracted the most scrutiny. To reduce its emissions, especially in such an unwelcoming environment, the city will employ all sorts of innovative and outlandish technology. All the buildings, naturally, will be supremely energy-efficient. Water will be recycled, to reduce the need for desalination. There will be dew-catchers, rainwater harvesting and electronic sensors to raise the alarm in case of leaky pipes. There will be green spaces, but with drought-resistant plants rather than the thirsty lawns and flowers that are the norm in Abu Dhabi.

No cars will be allowed. Instead, people will have to walk, or take "personal rapid transit"—small pods that will zoom around the city on tracks, akin to metro cars for individuals. Goods will be moved in the same way. The city will be walled, to keep out the hot desert wind. The lack of cars will allow for narrow, shaded streets that will also funnel breezes from one side of the city to the other.

Roofs, canopies and a large patch of land on the edge of the city will be given over to solar panels. The city is already testing 41 types of panel from 33 different manufacturers, to see which work best in the sunny, hot and dusty desert conditions. There will also be the odd wind turbine, solar water-heaters and small waste-to-energy facilities (the city's planners do not like to call them incinerators).

The plans leave space to adopt new technologies when they reach maturity. A spot has been saved for algae ponds that might some day produce biofuel, for example. For the time being they will be used for research. The whole city is being built on a raised platform, to give easier access to the pipes and wiring that would normally be buried underground and to allow the transport pods to zip around unfettered. That will also make it easier to install revolutionary new kit in future. Indeed, the source of roughly a fifth of the city's power supply has not yet been decided, on the assumption that there will be better options available by the time the project is due to be completed, in 2016.

Following the footprints

All this, it is hoped, will allow the city to produce more energy than it consumes and ensure that less than 2% of the waste it generates ends up in landfills. Carbon sequestered in the city's vegetation, along with exports of surplus green energy, should be enough to offset the emissions associated with construction, says Khaled Awad, who is managing the site. Contractors say they are keeping careful track of their carbon footprints and mutter about the difficulties of finding concrete and steel with a high recycled component. A bewildering array of recycling bins stands prominently in the waiting area of the site office.

A vision of the clean-tech future

But the city's zero-carbon claim is a bit of a fudge. For one thing, the city will not produce enough energy to power itself at night, due to its reliance on solar panels. Instead, it will import gas-fired power from Abu Dhabi's grid, at least until energy-storage technology improves. It will make up for this in its carbon accounting by exporting excess solar power to the grid during the day. In addition, to keep energy use down, the city will not allow any energy-intensive industries within its boundaries, even though spurring local manufacturing is a big part of the Masdar initiative.

Furthermore, in itself, Masdar will do little to improve Abu Dhabi's carbon footprint. Cheap oil, natural gas and power will continue to spur emissions-intensive industry and conspicuous consumption. Next to Masdar city, a Formula One racetrack and a Ferrari-themed amusement park are being built. In fact, Mubadala, the development agency behind Masdar, owns a 5% stake in Ferrari and sponsors its Formula One team. Just a few miles up the road, it is building the world's biggest aluminium smelter, complete with its own gas-fired power plant. A nearby mall is even planning to install an indoor ski slope, like the one in nearby Dubai.

But Masdar's creators, to be fair, seem to see it more as a development project than as an environmental one. They do not pretend that Abu Dhabi is about to wean itself off oil and gas. But its rulers, they say, want to diversify its economy, in preparation for the day it runs out of oil—or of customers for it. Since local workers and officials have already built up some expertise in energy, it makes sense to capitalise on that.

What is more, Abu Dhabi, with its intense, year-round sunlight and desperate thirst for water, is ideally suited to develop technologies such as solar power and desalination. And thanks to all that oil, there is no shortage of capital. Masdar plans to help finance promising technologies at all stages of development. It will set up its own incubator to nourish local start-ups, in addition to the clean-tech fund and other strategic investments in mature firms.

Human capital, however, is another story. Mr al-Jaber says that Masdar has studied successful technology clusters around the world in an effort to recreate the same conditions in Abu Dhabi. He is particularly keen to mimic the welcoming regulatory environment and efficient infrastructure of places such as Singapore and Ireland. Foreign firms setting up shop in Masdar city will, he points out, be able to work without local partners if they want, and to move capital freely in and out of the country. There will be strong protection of intellectual property and little in the way of paperwork. Most alluringly, they will not pay any taxes.

MIST, meanwhile, seeks to entice great minds with the promise of minimal teaching requirements—just one course at a time—and plenty of opportunities to pursue original research. The "open laboratory" of Masdar city is another draw, says Marwan Khraisheh, who runs the institute. It has succeeded in recruiting faculty or students from grand American universities such as Cornell, MIT and Princeton.

Masdar itself, meanwhile, has recruited such figures as Rajendra Pachauri, the head of the United Nations' climate panel, and John Browne, a former boss of BP, to help select the winner of a prize for innovation in energy. Britain's Prince Charles is a patron. In the project's headquarters, renewable-energy executives hoping to sell their wares fill the waiting room, while thrusting young staffers of many nationalities rush to and fro. Jonathon Porritt, a celebrated British environmentalist, ambles past.

Of course, Abu Dhabi is still not Silicon Valley. MIST is tiny, and will not admit its first doctoral student until 2011. The city has a miserable climate and little in the way of entertainment apart from malls and restaurants. But it is more cosmopolitan and less conservative than many imagine. Most foreigners arriving in Abu Dhabi for the first time find it "better than they expect", says Mr Khraisheh. Perhaps the

same will be true of Masdar, too.

Economist.com SCIENCE TECHNOLOGY QUARTERLY

Brain scan

Enlightenment man

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Sergey Brin, one of the founders of Google, believes knowledge is always a good thing—and that more of it should be shared

A FORMER vice-president, Al Gore, and one of the co-founders of Google, Larry Page, were already seated on the stage of Google's "Zeitgeist" conference, an exclusive gathering for the intelligentsia, but the third chair was still empty. After a few minutes, Sergey Brin, the other founder of the world's biggest internet company, joined them. Messrs Gore and Page gave him the floor, because Mr Brin had something important to say.

The global "thought leaders" in the audience at Zeitgeist had just spent two days talking about solving the world's biggest problems by applying the Enlightenment values of reason and science that Google espouses. But Mr Brin, usually a very private man, opened with an uncharacteristically personal story. He talked about his mother, Eugenia, a Jewish-Russian immigrant and a former computer engineer at NASA, and her suffering from Parkinson's disease.

The reason was that Mr Brin had recently discovered that he has inherited from his mother a mutation of a gene called LRRK2 that appears to predispose carriers to familial Parkinson's. Thus Mr Brin, at the age of 35, had found out that he had a high statistical chance—between 20% and 80%, depending on the study—of developing Parkinson's himself. To the surprise of many in the audience, this did not seem to bother him.

One member of the audience asked whether ignorance was not bliss in such matters, since knowledge would only lead to a life spent worrying. Mr Brin looked genuinely puzzled. First of all, he began, who's talking about worrying? His discovery was merely a statistical insight, and Mr Brin, a wizard at mathematics, uses statistics without fretting about them. More importantly, he went on, his knowledge means that he can now take measures to ward off the disease. Exercise helps, as does smoking, apparently—although Mr Brin, to laughter, denied taking up cigarettes (a vice of his father's).

But Mr Brin was making a much bigger point. Isn't knowledge always good, and certainly always better than ignorance? Armed with it, Mr Brin is now in a position to fund and encourage research into this gene in particular, and Parkinson's in general. He is likely to contact other bearers of the gene. In effect, Mr Brin regards his mutation of LRRK2 as a bug in his personal code, and thus as no different from the bugs in computer code that Google's engineers fix every day. By helping himself, he can therefore help others as well. He considers himself lucky.

The moment in some ways sums up Mr Brin's approach to life. Like Mr Page, he has a vision, as Google's motto puts it, of making all the world's information "universally accessible and useful". Very soon after the two cooked up their new engine for web searches, in the late 1990s at Stanford University, they began thinking about information that is today beyond the web. Their vast project to digitise books has been the most controversial so far, prompting a lawsuit from a group of publishers in 2005 that was resolved in October. But Messrs Brin and Page have always taken a special interest in the sort of information that most people hold dearest: that about their health.

From Russia with maths

Mr Brin's faith in the transformative power of knowledge also has personal roots. He was born in the Soviet Union, an opaque society and one often hostile to his Jewish parents. His father, Michael, wanted to be an astronomer, but Russia's Communists barred Jews from the physics and astronomy departments at universities. So Michael Brin became a mathematician, as his father had been. This too was difficult for Jews, who had to take special, more difficult entrance exams. Both Michael and Eugenia passed nonetheless.

But it was clear that they had to get out to lead fulfilling lives. They applied for an exit visa in 1978. Michael Brin was fired for it, and his wife resigned. Fortunately, they received their visas, and in 1979 emigrated to America. Sergey was six at the time. He went to a Montessori school and learnt English, though he retains a hint of a Russian accent to this day. Language did not come naturally to him. Maths did. So Sergey followed his father and grandfather into mathematics, adding computer science at the University of Maryland, and then went to Stanford to get his PhD. Silicon Valley, with its casual dress, sunshine, optimism and curiosity was an instant fit.

At an orientation for new students he met Larry Page, the son of computer scientists and also of Jewish background. They instantly annoyed each other. "We're both kind of obnoxious," Mr Brin once said—as ever, half in jest, half serious. They decided to disagree on every subject that came up in conversation, and in the process discovered that being together felt just like home for both of them. They became intellectual soul-mates and close friends.

Mr Brin was interested in data mining, and Mr Page in extending the concept of inferring the importance of a research paper from its citations in other papers. Cramming their dormitory room full of cheap computers, they applied this method to web pages and found that they had hit upon a superior way to build a search engine. Their project grew quickly enough to cause problems for Stanford's computing infrastructure. With a legendary nudge—from Andy Bechtolsheim, a prominent Silicon Valley entrepreneur and investor who wrote a $100,000 cheque to something called Google Inc—Messrs Page and Brin established a firm by that name.

Suspending their PhD programmes with Stanford's blessing, the two became entrepreneurs of a typical Silicon Valley start-up. They even worked out of a garage for a time, as Valley lore seems to require. One advantage of this particular garage was that its owner, an early Google employee, had a sister, Anne Wojcicki, who got along well with Mr Brin and has since become his wife. Ms Wojcicki, moreover, had an interest in health information, and began talking to Mr Brin about ways to improve access to it.

Google began its astonishing rise. On the advice of their investors, the founders hired Eric Schmidt, a technology veteran, as chief executive, to provide "adult supervision". Mr Schmidt's role was to reassure Wall Street types that Google was responsibly run, in preparation for a stockmarket listing. As Google filed its papers, the world discovered that Google had added to its breakthrough in search technology a fantastically lucrative revenue model: text ads, related to the keywords of web searchers, that charge an advertiser only when a consumer actually clicks and thereby expresses an interest.

As Google's share price went up, Messrs Brin and Page became multi-billionaires. Wealth has its effects, and stories began leaking out. There was, for instance, the Boeing 767 that Messrs Page, Brin and Schmidt began sharing and that Mr Brin was eager to turn into a "party plane" with beds sufficiently large for comfortable "mile-high club" membership.

"Solving big problems is easier than solving little problems," Mr Page likes to say.

Yet their indulgences tend to share three less decadent features. First, they enjoy being just plain goofy. During their rare meetings with the press, Mr Schmidt will typically talk the most but say least, rattling off official company positions until the journalists succumb to exhaustion. Messrs Page and Brin, meanwhile, will sit next to him and exchange the odd knowing look, then add the occasional short, inappropriate and mildly embarrassing—but often hyper-perceptive—aside that livens things up and forces Mr Schmidt to backpedal for a few minutes.

Second, they are drawn to pranks and diversions that are educational—and ideally outrageous. They used to be regulars at Burning Man, a festival in the Nevada desert where oddballs display innovative art and mechanical creations. And Mr Brin has invested $5m—in effect, the price of his ticket—in a company based in Virginia that arranges trips for private individuals to the International Space Station on Russian *Soyuz* spacecraft.

Try not to be evil

Third, Messrs Brin and Page appear to be trying to do good. They have been mocked endlessly, and understandably, for their corporate motto ("Don't be evil"), but probably mean it. When they start to look evil, it is usually out of naivety. Google went into China agreeing to censor its search results to appease the Communists, but did so in the belief that a lot more information, with omissions clearly labelled, makes the Chinese better off. Mr Brin certainly had the Russia of his youth in mind, but agonised over the decision.

Despite the best intentions of Google's founders, privacy advocates worry that it knows a dangerous amount about its users, which might be released inadvertently if something goes wrong. And there is growing concern about Google's dominance of the internet-advertising market.

But Messrs Page and Brin have other things on their minds. "Solving big problems is easier than solving little problems," Mr Page likes to say, and both preach a "healthy disregard for the impossible". They hope, for instance, to help solve the world's energy and climate problems via google.org, Google's philanthropic arm. Health is another big problem. Mr Page, Mr Brin and his wife, Ms Wojcicki, have brainstormed with people such as Craig Venter, a biologist who helped map the human genome. Mr Brin instinctively regards genetics as a database and computing problem. So does his wife: she co-founded, with Linda Avey, a firm called 23andMe that lets people analyse and compare their genomes (made up of 23 pairs of chromosomes).

The relationship between Google and tiny 23andMe has on occasion raised eyebrows. Google is an investor, although Mr Brin has recused himself from decisions about it. But Mr Brin and Ms Wojcicki are quite the marketing pair. When the global political and economic elite gathered at Davos, a big draw was 23andMe's "spit party" where the rich and famous salivated into tubes to provide DNA samples. A cynical view of Mr Brin's Zeitgeist announcement is that it was just a marketing stunt. Ms Wojcicki and Ms Avey were in the room as he spoke.

More likely, Mr Brin and his wife have genuine faith in the value of genetic knowledge for its own sake. They get their kicks by comparing whether they share the gene that makes urine stink after eating asparagus, or the one that determines whether earwax is mealy or oily. But they do ultimately regard it as code. And code, as Messrs Brin and Page often say, benefits from many eyeballs, which is why Google typically uses and releases open-source software, such as its web browser and mobile-phone operating system. (It does, however, keep its search and advertising algorithms private.)

Mr Brin was therefore setting a public example with his announcement at Zeitgeist. Let everybody discover their genomes, through 23andMe or another firm, and then feel comfortable sharing the code so that others—patients, doctors, researchers—can get to work crunching the data and looking for the bugs. Throughout history, the prospect of greater access to knowledge has frightened some people. But those are not the people that Sergey Brin mixes with in Silicon Valley.

Offer to readers

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Nuclear energy

Power struggle

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Will France continue to lead the global revival of nuclear power?

AFP

“WE THOUGHT there was a future in nuclear power when no one else believed in it,” says Anne Lauvergeon, chief executive of Areva. The French, government-owned company is building the first nuclear reactors to be constructed in western Europe for nearly 20 years. With “no oil, no gas, no coal and no choice”, France decided to go nuclear in 1974, and today about 80% of its electricity is generated by 59 nuclear plants across the country. But even France became pessimistic about nuclear power: it stopped building new reactors at the end of the 1980s and in 2002 a government report called the industry a “monster without a future”.

How things have changed. Nuclear power is back in favour, thanks to fears about oil supplies, energy security and global warming. France is poised to develop its expertise into a significant export. Its president, Nicolas Sarkozy, considers the sale of nuclear power to be central to his diplomacy: it is a badge of France’s technical prowess and a reaffirmation of its status as a global industrial power. Soon after his election 18 months ago, he toured countries from China to Libya to tout France’s nuclear expertise, signing deals to open the way for French firms to sell reactors.

France has two competitive advantages in the field. First, it has the most recent and extensive experience of any country in building and operating nuclear plants. That has given Areva’s “third generation” reactor design, called the EPR, an edge over blueprints from its two big rivals: Westinghouse, now a unit of Toshiba of Japan, and GE Hitachi, a recently formed joint venture. Second, French engineers have developed a novel reprocessing technique, so that nuclear energy produces less waste than in other countries.

Areva’s EPRs are under construction at Flamanville in Normandy, Olkiluoto in Finland and Taishan in China. Areva forecasts that demand for nuclear capacity could bring it orders for 60 reactors, or one-third of the total market, by 2020—each with a price tag of around €5 billion ($6.3 billion). Westinghouse has orders from China for four of its new AP1000 reactors, and GE Hitachi’s ESBWR design is being considered by several American utilities.

The high cost of building new plants, and the uncertainty over the cost of nuclear energy relative to other

sources, could delay the nuclear renaissance, especially in the midst of a credit crunch. Luckily for vendors, governments are bent on tackling climate change and securing energy supplies, and are likely to offer big subsidies.

Britain, for one, has given its blessing to France's nuclear ambitions: in September Electricité de France (EDF), a state-owned energy giant which owns and runs France's plants (and is thus closely intertwined with Areva), bought British Energy, a troubled utility in which the British government held a big stake. British Energy plans to build four new reactors in Britain and is now certain to choose Areva's EPR. And this month South Africa is due to say whether it will proceed with a plan to build up to 12 reactors—and whether it will use Areva's or Westinghouse's design.

In some markets, the French may lose out to local rivals. This week EDF launched a defensive $4.5 billion bid for half of the nuclear business of Constellation, an American utility. EDF had hoped to use Constellation as a platform to expand in America, and in February this year the two firms' joint venture, UniStar, agreed to propose Areva's EPR for construction in America. But in September Constellation agreed to be acquired by MidAmerican, a unit of Warren Buffett's Berkshire Hathaway.

This could thwart EDF in America, and could even prompt Constellation to dump the EPR and choose technology from GE, in which Mr Buffett holds a big stake. Westinghouse is Areva's most formidable opponent for now, but GE "must be the front-runner when America starts to rebuild its nuclear industry," says Harold Fairfull of Consilium, a utilities-finance advisory firm. He predicts that Areva will be dominant in Europe, and GE in America.

Areva's rivals must relish the fact that both its new showcase reactors have run into trouble. At Olkiluoto, Areva's EPR is three years behind schedule and an estimated €1.5 billion over its initial budget of €3 billion. A French nuclear executive says the main reason Areva has had such difficulties was that it bid fiercely to keep GE out. At Flamanville there have also been construction difficulties. Areva and EDF say any firm would have had problems after such a long hiatus in building plants. The delays may also reflect a shortage of nuclear skills that is not unique to France.

France will probably find it easiest to sell nuclear power in emerging markets. Mr Sarkozy's tour of the Arab world raised concern among non-proliferation specialists. But in reality, only a fraction of the projects announced will lead to the building of nuclear power stations, according to a French official. The country most likely to end up signing a contract is the United Arab Emirates, says an insider; a deal with Libya, though, is "unthinkable". But France can count on selling dozens of reactors to countries such as Brazil, China and India.

To help Areva expand abroad, Ms Lauvergeon wants to localise the firm in its most important markets. Nuclear power's capital-intensive nature means the cost of labour is relatively unimportant, so Areva can afford to employ expensive workers in rich countries. "We've created more jobs in America than Westinghouse or GE," she says. In October Areva said it would build a factory for nuclear parts in Virginia. In Britain, Areva plans to revive nuclear-related manufacturing. For that reason, says Ms Lauvergeon, "my dream is that in future we will be helped and defended by Barack Obama and Gordon Brown, as well as by Nicolas Sarkozy."

Indeed, the big question for the future of French nuclear power is whether Areva will at last break free from the French state. In several markets, such as America, it would be simpler if Areva were a private firm like its rivals, says Nicolas Véron of Bruegel, a Brussels think-tank. In 2005 Ms Lauvergeon suffered a blow when the government abruptly cancelled her plan for a share offering. She has since fought against a government plan to create a three-headed national champion by merging Areva with Alstom, an engineering firm rescued from bankruptcy by the state in 2004, and Bouygues, an industrial conglomerate. Areva wants its customers to be free to choose to buy ancillary components, such as turbines, from whomever they like, rather than having to buy everything from a combined Areva/Alstom/Bouygues.

Such a merger would also mean ending a successful partnership with Siemens, a German engineering giant which owns 34% of Areva NP, Areva's nuclear-reactor subsidiary. That could hurt Areva's prospects in Germany. A decision on the matter is expected soon from the government. "The merger is dead," says an Areva insider, but other nuclear executives say that the outcome is still unpredictable. Perhaps Mr Sarkozy will see that Areva has little need for more government intervention. It is already a national champion.

Pharmaceuticals

Patently absurd

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From The Economist print edition

The European Commission thinks Europe's drugs markets need fixing

CAUGHT in a squeeze between the health needs of ageing populations on one hand and the financial crisis on the other, governments everywhere are looking for ways to slow the growth in health-care spending. Increasingly, they are looking to the generic-drugs industry as a saviour. In November Japan's finance ministry issued a report complaining that the country's use of generics was less than a third of that in America or Britain. In the same month Canada's competition watchdog criticised the country's pharmacies for failing to pass on the savings made possible by the use of generic drugs. That greed, it reckoned, costs taxpayers nearly C$1 billion ($800m) a year.

Then on November 28th the European Commission unveiled the preliminary results of its year-long probe into pharmaceutical giants in the European Union. The report reached a damning, albeit tentative, conclusion: the drugs firms use a variety of unfair tactics to protect their expensive blockbuster drugs by delaying the entry of cheaper generic rivals. Though this initial report does not carry the force of law (a final report is due early next year), it has stirred up much controversy. Neelie Kroes, the EU's hyperactive competition commissioner, says she is ready to take legal action if the evidence warrants it.

One tactic the investigators decry is the use of the "patent cluster". A firm keen to defend a blockbuster due to go off-patent may file dozens or hundreds of new patents, often of dubious merit, to confuse and intimidate potential copycats and maintain its monopoly. An unnamed drugs firm once took out 1,300 patents across the EU on a single drug. The report also suggests that out-of-court settlements between makers of patented drugs and generics firms may be a tactic used by the former to delay market entry by the latter.

According to EU officials, such alleged misdeeds have delayed the arrival of generic competition and the accompanying savings. On average, the report estimates, generics arrived seven months after a patented drug lost its protection, though where the drug was a big seller the lag was four months. The report says taxpayers paid about €3 billion ($3.8 billion) more than they would have had the generics gone on sale immediately.

But hang on a minute. Though many of the charges of bad behaviour levelled at the patented-drugs industry by EU investigators may well be true, the report seems to let the generics industry off the hook too lightly. After all, if the drugs giants stand accused, in effect, of bribing rivals to delay the launch of cheap generics, shouldn't the companies that accepted those "bribes" also share the blame?

AP

Kroes on the warpath, again

The real problem in Europe's generics markets is not that generic drugs arrive too slowly after branded drugs go off-patent, but that prices drop too slowly after generics are launched. "Americans pay much less for generic drugs than Europeans," says Arthur Higgins, head of the health-care arm of Bayer, a German pharmaceuticals giant. The EU's report found that, on average, generics enter European markets at a price roughly 25% below that of the branded drug, and drop a further 40% after two years. In contrast, when many generics hit the American market, prices fall by 80% or more within a year.

One reason is over-regulation. Most big EU countries rely on a muddle of "reference pricing", price caps and other regulations to set generics prices. Academics at the London School of Economics have concluded that this approach is less effective in reducing prices than the free-market approach used by America (and, to its credit, Britain). A recent Dutch attempt to liberalise generics prices is reckoned to have saved €400m a year on just 33 medicines.

Another possible reason for the lack of price competition in Europe's generics market could be anti-competitive behaviour by generics firms. It may be no coincidence that just days before releasing its new report, the intrepid Ms Kroes ordered dawn raids on several leading companies. The other shoe may yet drop.

America's carmakers

Back again

Dec 4th 2008
From The Economist print edition

Will Congress lend a helping hand to a humbled Detroit Three this time?

HAVING flown their corporate jets into a hail of congressional bullets last month, the chastened bosses of Detroit's Big Three car firms—General Motors (GM), Ford and Chrysler—made their way back to Washington, DC, this week by road, in fuel-sipping hybrids. They hope that this belated gesture, and the new restructuring plans they were due to present to legislators as *The Economist* went to press, will win them $34 billion of taxpayer-funded loans to help them stave off bankruptcy. But whether their efforts will be enough to land that much money remains unclear.

That they will get something is not in much doubt. All three have made other obeisances to the prejudices of congressional Democrats. From now on, an increasing proportion of the vehicles they produce will use the latest technology to achieve low or zero emissions. Executive pay will be pegged—the three bosses are each promising to work for $1 a year. Those company jets are all to be sold.

Less certain is whether help will come soon enough and whether even the huge sums the car companies are pleading for will be enough to save them. Against the sombre backdrop of a 37% drop in November sales (compared with a year earlier) for the industry as a whole, GM's sales fell by 41% and Chrysler's by 47%. Only Ford bucked the trend slightly with a fall of 31%—the same as Honda and less than Toyota. It looks as though buyers are steering clear of GM and Chrysler, which are teetering on the edge of bankruptcy, whereas Ford is regarded as a safer bet.

The plans submitted by the three companies on December 2nd amply justified those sentiments. Although Ford is asking the government for a $9 billion line of credit, it still hopes not to need it. Its biggest fear is being dragged down if either of its rivals fails. Ford also looks in better shape than the other two, with a well-advanced strategy for cutting costs and bringing its highly rated European models to North America. By 2011 it expects to be either breaking even or back in profit. Ford's plan also has the merit of detailing in crisp, no-nonsense terms where the firm has gone wrong in the past, perhaps because its chief executive, Alan Mulally, was at Boeing when those mistakes were being made.

By contrast, GM's 37-page submission seemed designed to instil fear rather than hope. The most alarming revelation was the speed at which GM's financial position is deteriorating. In total, GM is now looking for $18 billion worth of loans, $6 billion more than it said it would need only a fortnight ago. So urgent is GM's plight that it says it needs $4 billion immediately just to get to the end of the month. Analysts at JPMorgan estimate that GM's cash burn in 2009 will be $14 billion, which means that Congress is being asked to believe that the sprawling car firm will have turned the corner by 2010, a year ahead of Ford. It seems more likely that GM expects to be coming back, cap in hand, some time next year, but is reluctant to admit it.

The other worrying thing about GM's proposals is the extent to which they depend on things outside its control. It is promising to convert a large part of its $43 billion debt pile into equity, but for that to happen, creditors must be willing to play ball. The threat of bankruptcy may persuade them, but GM keeps repeating the mantra that "bankruptcy is not an option". GM also says it now intends to slim down to just four core brands (Chevrolet, Cadillac, Buick and GMC), something it should have done ages ago. But it did not because its dealers—GM has more than twice as many as it really needs—are protected by powerful state-franchise laws.

If GM's prospects are likely to remain clouded even if it gets the money it is asking for, Chrysler's are even worse. It says it needs $7 billion to be able to continue trading after the end of this year. Its owner, Cerberus Capital Management, a private-equity firm, knows that it can expect scant sympathy given the anti-Wall Street mood in Congress. As nobody really believes that Chrysler has a long-term future, it is pinning its hopes of a bail-out on the potential domino effect of letting it go when GM and Ford are in such a fragile state.

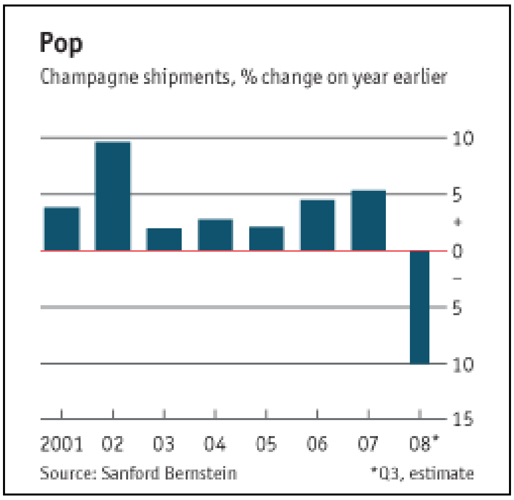
One piece of good news for the car giants is that the United Auto Workers (UAW) said on December 3rd that it was prepared to make concessions to help them. The union's leader, Ron Gettelfinger, said that payments of billions of dollars into health-care funds for retired workers, due to be made by 2010, could be delayed. And the controversial "jobs bank" scheme, which pays some laid-off workers to do nothing, will be scaled down. The UAW had previously insisted that it had already done enough to help the car companies. That it has unexpectedly changed its tune shows just how bad things are.

Champagne

Losing its fizz

Dec 4th 2008
From The Economist print edition

Sales of champagne decline along with the economy



CHAMPAGNE has long been associated with luxury, success and extravagance, thanks to a constrained supply, clever marketing, literary associations (James Bond was fond of Taittinger in the books and Bollinger in the films) and powerful customers, from the Russian imperial court, for whom Roederer's Cristal was invented, to Sir Winston Churchill, who downed copious amounts of Pol Roger. Over the past two decades champagne shipments went up by an average of 2.2% a year. Recently some markets have grown even faster: America's consumption rose by 3.5% a year, Britain's by 4.2% and Japan's by a foaming 18.1% between 2002 and 2007.

This has raised the champagne houses' return on capital to well above the norm in the wine world: Laurent Perrier's return on capital was 13% last year, for example. A successful campaign to restrict the use of the champagne name—and even the term *méthode champenoise*—to a tiny region of northern France means that champagne commands a huge premium over sparkling wines produced by the same firms, using the same method, from the same grape varietals in other countries.

Buoyed by the strength of demand, and faced with increasing grape costs from growers, most of whom are independent, the big houses have raised prices steadily in the past five years. Laurent Perrier, the pushiest, raised its average prices by 5% in 2006-07 and by 9% during the second and third quarters of 2008.

But the bubble has now burst, says Trevor Stirling, an analyst at Sanford Bernstein. Only Moët et Chandon, the biggest of the five public producers (responsible for Veuve Clicquot, Mercier, Ruinart and Krug, as well as the Moët marque) maintained its revenues in the third quarter. The other four—Rémy (Piper Heidsieck and Charles Heidsieck), Vranken Pommery, Boizel (Lanson) and Laurent Perrier—have seen their sales plunge. Worst hit was Laurent Perrier, where sales were 30% lower in the third quarter than in the same period in 2007.

Because the financial turmoil has deepened since September, Mr Stirling reckons that sales have since fallen even further. "Wholesalers will be sitting on a lot of stock, so we are expecting big price cuts even before Christmas, traditionally the busiest selling season," he says. Perhaps cheap fizz is just what depressed bankers need right now. As Churchill (or was it Napoleon?) is supposed to have said of champagne, "In victory you deserve it; in defeat you need it."

Nokia

Ovi go again

Dec 4th 2008
From The Economist print edition

The world's biggest handset-maker makes a new push into mobile services

AT FIRST glance, Nokia, the world's biggest handset-maker, seems to be lurching about. On November 27th it announced that it would withdraw from the Japanese market because of lack of demand. Five days later the Finnish firm said it would make a big push into two other markets: maps and e-mail on mobile phones. Both moves, although not directly related, show where the firm is heading: it is no longer pursuing growth just in handsets, but also in services delivered on them.

It is easy to see why Nokia wants to move into services. The handset market is maturing. In many rich countries there are more mobile subscriptions than people. Rapid growth is limited to emerging markets. Handsets are becoming a commodity with shrinking margins. Nokia could focus on increasing its market share, which stands at nearly 40% worldwide. The more promising bet, however, is mobile services, a market that is finally taking off.

Nokia is not new to mobile services, but its earlier forays into the field were not very successful. A few years ago, when it launched Club Nokia—a mobile store for ringtones and other add-ons for its phones—mobile operators saw it as an attempt to take over the relationship with their customers. They complained, and since Nokia mainly sells its handsets to operators, rather than directly to consumers, Club Nokia was duly scaled back. In August 2007, however, Nokia launched a new services initiative in the form of Ovi, an attempt to create a global one-stop shop for mobile services, much like those Yahoo! and Google provide for the internet.

Nokia wants Ovi, which means "door" in Finnish, to be even more: a hub that integrates mobile services between handsets and personal computers (PCs). To see what it has in mind, consider two popular online services: digital maps and photo sharing. Pictures taken using a mobile phone equipped with positioning technology—such as Nokia's new touch-screen N97, also launched this week—can be automatically stamped with co-ordinates and uploaded to the Ovi website, where they appear on a map to be shared with friends.

The industry initially greeted Ovi with scepticism. But Nokia has made steady progress in the past year. It has spent more than $10 billion buying firms with technology to support its services strategy, notably Navteq, the world's biggest maker of digital maps. Nokia also launched new offerings, including a music store and a service that synchronises phone numbers and other data between a PC and a handset.

Nokia

Nokia maps out its strategy

Surprising many industry observers, Nokia has convinced leading mobile operators such as Vodafone and T-Mobile to support Ovi on their handsets. Ovi will be offered alongside their own services, and operators will take a cut of the revenues which Nokia hopes to make from advertising, e-commerce and subscriptions to premium services. The operators are less worried about Nokia's push into services this time around because their own efforts to build mobile portals largely failed.

With this week's launch of two new services, called "Maps on Ovi" and "Mail on Ovi", Nokia has all its key services up and running. Now it needs to tackle the hard part of its strategy: making it all work together seamlessly, for instance by offering a single sign-on for all its services and one-touch access. Only then, says John Delaney of IDC, a market-research firm, are consumers likely to go for Ovi, rather than picking and choosing their own set of services, as they mostly do on the internet.

Nokia also faces the task of getting the word out and convincing people to sign up, argues Ben Wood of CCS Insight, another market-research firm. Nokia has done hardly any advertising for Ovi so far: it wanted to make sure that its services worked well first. It will start to advertise Ovi in 2009, but it will not be easy to create a brand that can rival the coolness of Apple’s iPhone or Google’s new mobile-phone software, called Android.

Still, it would be wrong to underestimate Ovi, or the Finnish firm’s determination to make it a success. Nokia also has the advantage of being the world’s leading handset-maker: it will sell around 470m devices this year, and if even a small proportion of its customers sign up for Ovi next year, that is a huge market. In developing countries, where most people do not have internet access, but more and more own mobile phones, “@ovi.com” could become as widespread an e-mail address as, say, “@yahoo.com” in the rich world.

Nokia also has history on its side. Having started off in forestry and paper products in the 19th century, it later moved into rubber, cables and electronics before focusing on mobile phones in the 1980s. Ovi is a gamble, but the 143-year-old firm has a knack for reinventing itself.

Online social networks

Socialising all over the web?

Dec 4th 2008 | SAN FRANCISCO
From The Economist print edition

Websites can now let visitors bring along their friends

Illustration by Claudio Munoz

A NEW button is appearing on some websites. It says “Facebook Connect” and saves visitors from having to fill out yet another tedious registration form, upload another profile picture and memorise another username and password. Instead, visitors can now sign into other sites using their existing identity on Facebook, the world’s biggest online social network. After a soft launch this summer, Facebook Connect was due to make its formal debut on December 4th.

It is an ingenious stab at solving several nagging problems at once. Web surfers like to socialise while they browse the internet, but many prefer to do so only with their friends rather than with perfect strangers. Previously, they could post web links back to their social network by clicking on a button called “Share This” or something similar. With Facebook Connect, however, they can interact with their friends while on another site. On a news site, for example, they can see what their friends are reading, how they rated a story, and what comments they left.

Many website owners like this because it lowers the entry barrier to new visitors who may want to interact with the site—by commenting, for instance—but don’t like the hassle of registering. Better still, the website is granted access for one day to the visitor’s public information on Facebook, such as his tastes or travels, which means content and advertising can be targeted accordingly.

Facebook Connect is thus the latest attempt to solve an old problem. At the beginning of this decade Microsoft, then feared as a bullying monopolist, tried but failed to create a “single sign-on” called “Passport” for the whole web. Nobody signed on. Since then, the web has become more social, but the clusters of human connections, or “social graphs”, tend to be isolated within various networks, sites and services.

A group of sites including MySpace, Facebook’s main rival, is pushing an “OpenID” button that works with any participating social network. Facebook Connect, which is a proprietary technology, wants to be more sophisticated. Facebook is still recovering from a fiasco last year when it launched a service called Beacon that broadcast its users’ purchases on independent websites to their Facebook friends. Users were often unaware of this and rebelled when they found out. With its Connect button, therefore, Facebook is treading carefully.

The big new idea, says Dave Morin, a Facebook Connect manager, is “dynamic privacy”. It means that, as the social network reaches out across the wider web, users will in theory take their privacy settings with them. Wherever on the web they are, they will be able to choose who among their friends will and won’t see what they are up to. As soon as a user demotes a “friend” from intimate to arm’s-length in his Facebook settings, this will also take effect on other sites.

Japanese trading companies

Captive and content

Dec 4th 2008 | TOKYO
From The Economist print edition

Does a traditional Japanese business model make sense in tough times?

JAPANESE trading companies have long been reviled by Western businessmen as inefficient middlemen and huge, monolithic entities that strangle the Japanese economy. But as the credit crunch causes firms in America and Europe to flounder for lack of funds, throwing supply-chains into disarray, Japan's trading-company model seems to have some merit.

This is because the *sogo shosha*, or trading houses, have always done far more than make a living from arbitrage and commissions: they also provide credit to the companies within their folds. Private firms in Japan receive more than ¥180 trillion (about $2 trillion) in trade credit and loans from outside the banking sector, with trading companies being most active. That is around two-thirds of the amount they receive from banks, notes Iichiro Uesugi, an economist at Hitotsubashi University.

The five big houses—Mitsubishi, Mitsui, Sumitomo, Itochu and Marubeni—tower over corporate Japan and worm their way into almost all business activity. Some date back to the 17th century. They came to the fore during Japan's rapid industrialisation in the late 19th century, procuring material from overseas for the resource-impoverished country and handling the export of finished goods. The *sogo shosha* attracted the brightest and most adventurous graduates. A retired Sumitomo man recalls an arduous elephant ride through the Burmese jungle in the 1950s to explore a mining site. The companies still sometimes act as diplomatic arms of the state.

But the middleman model was abandoned in the 1990s. Now the firms use knowledge of one market to move into adjacent areas, take control of an entire supply chain and improve their pricing power. Mitsubishi, for example, imports food, processes it, distributes it and sells it via convenience stores in which it holds a stake, says Ichiro Mizuno, the firm's finance chief. The *sogo shosha* also anticipate future needs and invest accordingly, for example in rare minerals for electronic firms.

As ersatz investment banks, they make short- and long-term loans and take equity stakes. In their role as wholesalers, they provide trade credit to facilitate transactions. Together the trading houses represent 3% of all trade credit in Japan, a huge figure (though down from a staggering 12% in the 1970s). Critically, they provide market confidence that the debts of their subsidiaries will be honoured. This is often done implicitly, since no company wants to damage its reputation—the most important currency in corporate Japan.

The financing model has changed dramatically. Credit to firms, as a proportion of trading houses' total assets, fell by half from its height in the 1970s and 1980s, and in the past 15 years loan guarantees doubled and equity stakes tripled. This suggests that the companies are investing their cash more productively. Moreover, the equity stakes (with handsome dividends) are designed to ensure that the subsidiaries do not "outgrow" (ie, escape from) their dependence on the trading houses, says a trading-company financier.

In recent years the trading companies' fortunes and share prices soared as slow growth at home prompted them to invest in commodities and foreign ventures. But this now makes them vulnerable to the global slowdown, and in recent months their shares have skidded. Even so, Shoei Utsuda, the president of Mitsui, believes the *sogo shosha* are relatively safe in the economic downturn. "We have diversity in our industries and in our geographies, so we are protected," he says.

But not everyone agrees. The danger is that the trading companies' ability to provide credit to small and medium-sized firms is itself dependent on their ability to obtain credit from the market, says Nobuo Inaba, a former Bank of Japan official now at Ricoh, an electronics firm. Their ability to manage their balance-sheets to ensure that they can continue to raise funds will determine not just their own prospects, but those of the armada of companies gliding in their wake.

Face value

Feeling the Pinch

Dec 4th 2008
From The Economist print edition

Arthur Sulzberger has come to embody the troubles of America's newspaper industry

Landov

THIS has been Rupert Murdoch week in New York, which has only added to the many difficulties of Arthur Sulzberger junior. Ordinarily, given that he has just slashed the dividend paid by the increasingly troubled New York Times Company, which he has run since 1997, Mr Sulzberger might have been grateful that everyone's attention has been on another media mogul. But "The Man Who Owns the News", a new biography that has made Mr Murdoch the talk of the town, contains a savage critique of Mr Sulzberger and describes in convincing detail Mr Murdoch's ever-stronger desire to acquire the *New York Times*.

The *New York Times* is Mr Murdoch's "favourite train wreck", writes his latest biographer, Michael Wolff, who had unprecedented access to the tycoon, his family and his employees. (This is not an authorised biography, but Mr Murdoch is said to be broadly pleased with a book that celebrates his acquisition in 2007 of Dow Jones, owner of the *Wall Street Journal*.) "I've watched [Mr Murdoch] go through the numbers, plot out a *Times* merger with the *Journal*'s backroom operations," writes Mr Wolff. "He has conjured, too, how in Murdoch style, he might convince the Sulzbergers to let him in, if he promises to leave Arthur in charge—and how he could then make Arthur his puppet."

Until recently, Mr Murdoch's dislike of Mr Sulzberger—the feeling is said to be mutual—could be attributed mostly to a right-winger's visceral dislike of the Manhattan-liberal journalism of the *New York Times*. But, if Mr Wolff is to be believed, in recent years Mr Murdoch's young wife, Wendi Deng, "has turned him into…well, almost a liberal." Instead, it seems, Mr Sulzberger strikes Mr Murdoch as a frightening case-study of how a newspaper dynasty can go wrong. Mr Sulzberger took over his father's newspaper business, and Mr Murdoch would like one of his children to inherit the reins of his firm, News Corporation. Ailing newspaper dynasties may offer a cautionary tale to Mr Murdoch, but they also present him with a commercial opportunity. The Bancroft clan that controlled Dow Jones (but no longer had a management

role) was another example of a newspaper dynasty that had lost its way. Mr Murdoch saw them off, against the odds, so why not repeat the trick with the Sulzbergers?

So far, the Sulzbergers have remained unwaveringly loyal to their latest son to run the family firm, though he gets more embattled by the day. He has had to give board seats to two activist investors who had loudly criticised him. Circulation has been eroding bit by bit, to an average of 1,077,000 per weekday in the six months to March. Advertising revenues fell by 13.7% in the third quarter, as the recession caused companies to slash marketing. The New York Times Company's share price has fallen by almost 60% this year, to its lowest in 24 years, taking the firm's market capitalisation to $1 billion. Mr Sulzberger's decision on November 20th to cut the firm's quarterly dividend by three-quarters, in order to conserve precious cash, could cost family shareholders $18m a year—though he had the full support of the controlling Ochs-Sulzberger Trust.

Ultimately, the Bancrofts lost the *Journal* because the family was torn apart by intergenerational warfare: the younger family members, who had no real connection to the newspaper business, were keen to sell and thus bank their inheritance. There are reports that the fifth generation of Sulzbergers is similarly restless, though as Mr Sulzberger has pointed out, the eight-member family trust that controls the company is much less exposed to this pressure than the many Bancroft-family trusts were. That said, an obvious heir has yet to emerge to Mr Sulzberger—nicknamed "Pinch"—who took over as chairman from his father, Arthur "Punch" Sulzberger, who had in turn succeeded his father. The fate of the Bancrofts has reinforced the belief of many observers that once the Sulzbergers cease to be practically involved in running the business, it will be only a matter of time before it is sold. That said, because Mr Sulzberger is only 57, succession is not yet an urgent question.

Grey days for the Gray Lady

Mr Murdoch apparently blames Mr Sulzberger for the New York Times Company's many problems. For a start, trying to make the *Times* a national newspaper loosened its essential ties with New York. Mr Sulzberger's excessive chumminess with some journalists contributed to two scandals that hurt the paper's reputation: the invented stories of Jayson Blair and the jailing (over her refusal to disclose sources in the Valerie Plame affair) of Judith Miller, a reporter who, the *Times* later said, it had protected too much. And although Mr Sulzberger talked about the need to evolve from being a newspaper into an internet brand, it was Mr Murdoch who became the new-media titan by acquiring MySpace.

Well, up to a point, Mr Murdoch. Mr Sulzberger's problems are largely those of the newspaper industry as a whole, the business model of which has been knocked sideways by the rise of the internet. News Corp's shares have actually fallen by more this year than those of the New York Times Company. And it is only Mr Murdoch's diversification many years ago into television and the internet that has camouflaged what a poor financial investment it was to buy the *Journal*. Moreover, the *Times* has done a better job than almost any other paper (except perhaps the *Journal*) in moving online. It now boasts the most visited American newspaper website, and on November 5th, the day after the presidential election, it had an impressive 61.6m page views. Mr Sulzberger's acquisition of About.com, a search engine, was a decent buy, though he could certainly have done more to develop it.

Yet the harsh fact is that, his fault or not, Mr Sulzberger has yet to find a business model on the web that generates enough money to support the *Times*'s high-quality, but expensive, global network of reporters. He is running out of time to do so. Meanwhile, Mr Murdoch dreams of becoming his puppet-master.

Savings

When the golden eggs run out

Dec 4th 2008
From The Economist print edition

A decade of poor returns and the onset of recession are likely to make investors cautious. That would be understandable, but mistaken

Illustration by Brett Ryder

IT IS the envelope they dare not open. When this year's statement from the financial adviser or pension plan lands on the doormat, many people will not want to know the bad news. They would rather put the envelope in a drawer and forget all about it.

This year has been a disaster for savers. The value of stockmarkets around the world has fallen by almost half and is now about $30 trillion below its peak. The prices of corporate bonds and commercial property have plunged. Anyone who diversified into commodities, hedge funds and private equity has also lost out. Even those shrewd enough to stick their money in a savings account have had to worry about the safety of the banks.

Worse still, the value of many people's main source of wealth—their houses—has fallen sharply, as *The Economist*'s house-price indicators continue to show (see article). On a quarter-on-quarter basis, residential-property prices are dropping in 23 of the 45 countries surveyed by Knight Frank, an estate agent.

The damage will vary from one person to the next, depending on where they have put their money, so figures on pooled portfolios are pretty much the only way of estimating savers' pain. The Investment Company Institute, the national association of American mutual funds, says the value of assets in such funds was $9.6 trillion at the end of October, $2.4 trillion less than at the end of 2007. The Congressional Budget Office (CBO) calculated in October that American pension funds had dropped in value by $2 trillion in the previous 18 months. And these American losses are just a portion of the global whole.

By way of comparison, the Bank of England estimates that $2.8 trillion has been lost in credit-related instruments, the devices that dragged the financial system down in the first place. The blow to savers in pooled investments thus easily exceeds the direct damage to the arcane area of the banking system where the crisis began.

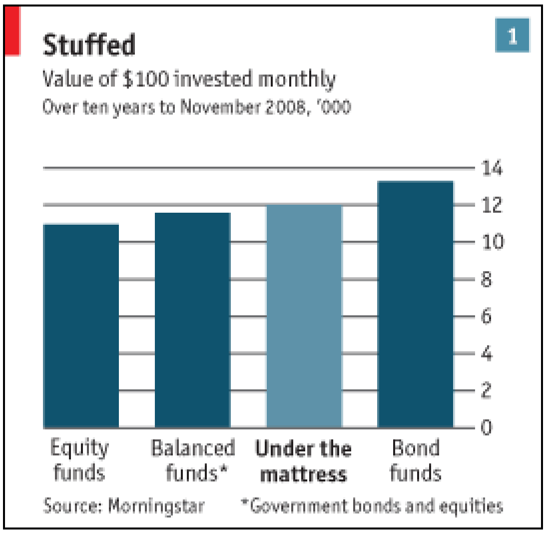
Indeed, the stockmarket's decline this year has been so steep that it has erased all the gains made in the rally from 2003 to 2007. In late November, the S&P 500 index dipped to its lowest level in 11 years. The extravagant claims made for equities in the late 1990s, when there was talk of the Dow Jones Industrial Average hitting 36,000 (or even 100,000) have proven to be hollow. Lately the Dow, which was at about

13,000 at the end of last year, has been trading between 8,000 and 9,000.

A good deal of these losses will have fallen on the very wealthy, who can cope. Many others, though, are not so well placed. And one class of investor will be especially badly hit: workers in defined-contribution, or money-purchase, pension schemes. These people's retirement income depends solely on the return generated by their pension funds; their employers are not liable to top up their pots if things go wrong. And the CBO reckons that defined-contribution plans are more exposed to equities than final-salary plans, in which the employer bears the risk.

A possible consequence of this is that workers will feel frustrated or let down, and thus be discouraged from saving for their old age—or at least from buying shares for the purpose. They were told that saving would pay in the long run. But those who have been methodically putting money into pension plans (often known in America as 401(k) schemes) must be wondering why they bothered.

Figures from Morningstar, an investment-research firm, show that an American who put $100 a month for the past ten years into the average equity fund would have accumulated just $10,932—$1,068 less than he invested (see chart 1). Even a balanced fund (one that mixes government bonds and equities) would have lost money. A European who invested a flat amount every month for the past decade would have lost almost 25% of his money, according to Lipper, another research firm.



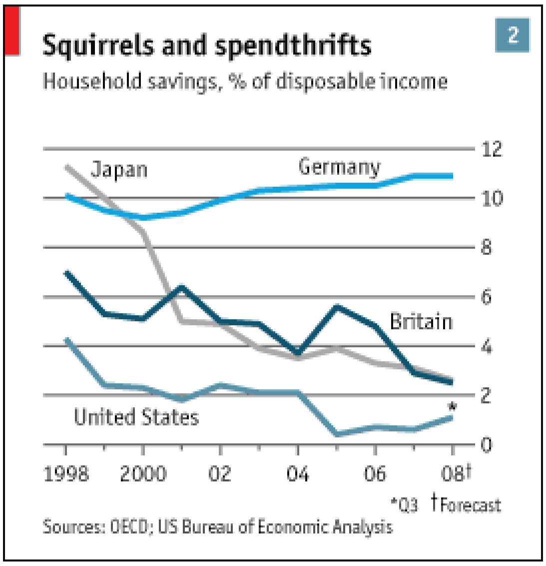
It is hard to get individuals to defer gratification: retirement seems a long way off for someone in their 20s or 30s. So, faced with the returns from past thrift, the temptation for many will be to opt out of the system altogether. Already, the American Association of Retired People estimates that 37% of workers lack a pension plan.

Spend, spend, spend

For a decade or more, American households in particular have seen little need to save out of income at all (see chart 2). The household savings ratio (the proportion of disposable income that is not spent) has been below 2.5% since 1999. Asset markets—first for shares, then for housing—were doing households' saving for them.

Calculating the savings ratio is an inexact business, because it is the residual between measures of income and consumption and so tends to be revised a good deal. It also excludes capital gains on existing investments, although the taxes on those gains are deducted from the income measure. You might imagine that a low ratio was nothing to worry about: add in capital gains—the savings a rising asset market bestows—and the ratio looks healthier.

Some economists accepted this argument. A paper from the American government's Bureau of Economic Analysis in 2002 argued that capital gains "can be as important as personal saving in determining the future consumption possibilities of households" and pointed out that the ratio of household wealth to income had rocketed in the late 1990s.



But should this really have been reassuring? Financial assets are simply a claim on goods and services. If their value rises a lot faster than GDP, that either suggests investors expect the GDP growth rate to rise substantially (unlikely in a mature economy), or that the assets are overvalued.

Similarly, if people borrow to buy houses, the immediate effect will be to push prices up higher and make personal balance-sheets look healthy. But as the past couple of years have demonstrated, that can push prices too far, prompting consumers to overextend themselves. As the economy deleverages—ie, borrowers are obliged to repay debt—balance-

sheets then deteriorate sharply.

All this looks particularly pertinent today. Americans and Britons may have been living in a fool's paradise for a decade, saving less than they should because they thought share and house prices would stay high for ever. Now they have learnt the awful truth, they may decide to save a lot more, making the recession even worse than expected. Economists at Lombard Street Research estimate that the American savings ratio, which turned negative in one quarter of 2005 (ie, consumers spent more than their incomes), may rise to 10% over the next year and a half.

Changes in the savings ratio are driven as much by borrowing as by saving habits. The ratio is a net figure. Many consumers spend more than they earn, borrowing or dipping into savings to make up the difference. Indeed, David Owen, an economist at Dresdner Kleinwort, an investment bank, points out that during this decade British households have generally saved more of their income than German households have. But they have borrowed more too: so much more that their savings ratio is much lower than the Germans'.

If the savings ratio is going to jump, it is most likely to be driven by the reluctance or inability of consumers to borrow. That was what happened in Britain in the recession of the early 1990s. According to Capital Economics, a research firm, borrowing (including mortgage equity withdrawal) fell by nearly £22 billion ($38 billion) between 1988 and 1992; conventional saving rose by just £14 billion in the same period.

Many economists might regard a marked increase in saving as a bad thing just now. With rich economies all around the world in recession, governments would rather people spent, not saved. That will not happen without a push—when workers are worried about the outlook for their jobs, they usually save more if they can. The same tends to be true when their existing wealth, including their houses, falls in value. So governments are loosening fiscal policies to try and maintain spending power.

Recklessly conservative

That said, saving could be good news for companies. In the long term, saving gives companies the funds to invest in new equipment and in research and development. In the short term, companies would be grateful for any equity capital they could raise from retail investors, so they could bolster their balance-sheets.

Alas, that looks unlikely. The problem is that investors do not regard financial assets as they do other goods; lower prices do not encourage them to buy more, but simply reduce their confidence. Past returns are the main determinant of flows into the stockmarket; investors buy when prices have gone up, not down.

Net retail sales of British mutual funds were £14.1 billion in 1999 and £17.7 billion in 2000, the two years at the peak of the dotcom bubble. Investors were happy to pay price-earnings ratios of 20 or 30 for the market, and more than 100 for some technology stocks. By 2003, the FTSE 100 index had fallen by more than half; net retail sales of mutual funds were only £8.1 billion. In the first ten months of this year, which have seen price-earnings ratios fall into single digits, net sales have slumped to just £1.3 billion.

British investors have been relatively stoic. In America, equity mutual funds saw net outflows of $195 billion in the first ten months of the year. In some European countries, the picture is a lot worse. According to Huw Van Steenis, an analyst at Morgan Stanley, the annualised pace of mutual fund outflows in Italy and Spain this year has been 24% and 26% respectively. Across Europe as a whole, about $200 billion has been withdrawn from mutual funds in the past 12 months.

Indeed, continental European savers' appetite for equities never recovered from the bursting of the dotcom bubble. A shareholder culture was being created in the late 1990s, thanks to privatisations and the creation of the German rival to the NASDAQ, the Neuer Markt, which collapsed spectacularly after the dotcom bust. But now investors want only the safest kind of mutual fund. European money-market funds received €95 billion ($120 billion) of inflows in the first nine months of the year, according to Morgan Stanley.

A focus on cash has its advantages. In the short term, the banks themselves will be very glad of a flood of retail deposits: that will leave them less dependent on jittery wholesale markets. And politicians will also be happy if cautious investors are willing buyers of government debt; many countries are moving

into heavy deficit in the face of the recession.

But it does not look helpful to companies. If they want to raise equity, who will buy it? Not the big corporate pension funds, which have been moving into bonds and alternative assets (like property) in recent years. And not the hedge funds, which are being forced to sell assets to return money to clients.

Nor is it good, in the long run, for savers. Cash generates very low long-term real returns, of around 1% a year. Roger Urwin of Watson Wyatt, a firm of consultants, describes an overconcentration on cash as "reckless conservatism".

Even low interest rates may not put them off. Having become used to (nominal) rates of 4-6% in recent years, savers may initially suffer from "sticker shock" if rates fall to 1% or so, as they already have in America and may well do in Europe. But the example of Japan suggests that nervous savers may be happy to receive nothing at all from their accounts if they think that is the only safe option: the return *of* capital becomes more important than the return *on* it.

What investors may be missing to their cost is that financial markets tend to revert to the mean. On the one hand, high past returns are an indicator of low future returns: that has certainly proved true for those who bought equity mutual funds at the turn of the decade. On the other hand, the converse is also true: low past returns (and low valuations) create an opportunity for the stout-hearted investor.

James Montier, a strategist at Société Générale, a French bank, has calculated that when American shares have traded on a low cyclically adjusted price-earnings ratio (a measure that smooths profits over the previous ten years), returns over the next decade have averaged 8% a year in real terms. When the initial valuation was high, the subsequent average was just 3%.

Risky assets look more attractive now than they have in ages. Corporate-bond spreads are sufficient to compensate for the kind of default levels seen in the Depression. Stockmarkets in America and Europe now offer a dividend yield that is higher than the yield on government bonds, something that has happened only rarely in the past 50 years.

Unfortunately, savers do not seem to take account of these long-term factors. When the stockmarket is falling, they tend to view the idea of investing more money into equities as sending good money after bad. And the average diversified American equity fund is down 41% for the year, according to Lipper.

Falling stockmarkets mean that, without doing much, a lot of savers are less exposed to equities. A recent survey by Hewitt Associates, a consulting firm, found that the proportion of 401(k) plans invested in equities was at an all-time low of 53.8%, compared with 74.2% in 2000. Arguably, workers were overexposed to shares at the turn of the decade. But they may be underexposed now.

Whatever their asset allocation, savers ought to be putting more money into their pensions, given their nest-eggs have taken such a beating. But there is little sign of that; employees subscribed just 7.8% of their salaries to 401(k) plans this year, according to Hewitt. Even if you add in the average employer's contribution of 4.4%, the amount is nowhere near sufficient to match the 20% of pay needed to fund the equivalent of a final salary pension.

Indeed, it was the realisation of how expensive that promise had become that led to many employers abandoning final-salary pension schemes in recent years, thereby passing the risk on to workers.

The generational challenge

Many people—especially the baby-boomers born between 1946 and 1964, who will be retiring over the next 20 years or so—will be asking themselves whether they will have enough to keep them comfortable in their old age, even if they save a lot. After all, it is generally accepted that they cannot rely on the state. The burden on the taxpayer would be too great.

But, as already noted, financial wealth is just a claim on the assets produced by the economy. Making pensions a claim on the private sector rather than the public purse does not change the problem. Will businesses in 20 years' time be producing enough income to pay the dividends and bond interest to pay baby-boomers their private-sector pensions? And what will happen to asset prices if the boomers try to cash in their portfolios?

In demographic terms, asset markets could be seen as a pyramid scheme, in which each generation aims to sell its accumulated savings to the next. Provided the next generation is larger than the one that preceded it, the savers can sell their assets at higher prices. That was the case for much of the 20th century.

The baby-boomers will upset the pattern. If they retire at 65, they will start offloading their assets in 2011. And even in America, which has fewer demographic problems than Japan, there are not enough new savers coming along to replace them. Some hope that emerging markets will solve the problem, by acting as buyers of developed market assets and a source of higher returns for investors in rich countries, but the theory is unproven.

Illustration by Brett Ryder

In a 136-page report, “The Business of Ageing”, John Llewellyn and Camille Chaix-Viros of Nomura, a Japanese bank, examine the potential effect on financial markets of ageing Western populations. As the baby-boomers run down their savings to fund their retirement, you would expect, other things being equal, real interest rates to rise (because the supply of savings will fall, relative to demand). As a consequence of this, the valuation of assets such as bonds and equities should come under pressure.

Evidence partly backs up this theory. For example, economists can plot a relationship between the proportion of the population aged between 35 and 59 (when people save most) and the level of real interest rates. The relationship has been negative, as theory would predict, since the 1980s (lots of savings kept interest rates low). The strong Western stockmarkets of the 1990s coincided with the boomers’ peak savings years. In Japan, the population aged sooner; some commentators have blamed this for the poor performance of the country’s equity market since the end of the 1980s.

Indeed, although the Japanese have a reputation of being a nation of savers, this has long since ceased to be true. Although the corporate sector has a surplus, the household savings ratio plunged from 11.3% in 1998 to 3% last year. One of the main reasons seems to be that the ageing population is running down its investments. For Japanese equity investors, it has not just been a lost decade, it has been a lost quarter-century; the Nikkei 225 average recently touched a 26-year low.

The worry is that the baby-boomers in Europe and America may be about to repeat the Japanese experience. They will react to the recession by saving more and thereby make the recession worse.

Nor will their savings earn a decent return if they invest the money in the wrong place. Keep the money in the bank and the returns could be paltry and the capital eroded by inflation. Put the money in equities and the risk is that developed stockmarkets suffer the same long slow, grinding bear run as Japan.

Dangerous as it might be, the second of these options looks the better. The time for investors to take financial risks is when risky assets offer a sizeable long-term return, not when risk premiums are low. Savers need to save themselves.

Corporate lending

Waiving or drowning?

Dec 4th 2008
From The Economist print edition

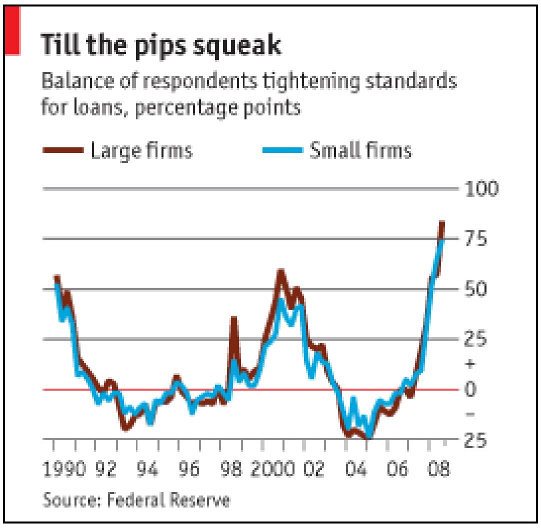
Even big firms are finding it tough to secure credit from the banks

Illustration by David Simonds

CONVENTIONAL wisdom says that it is better to be a large company than a small one when credit is tight. Bigger firms have more room for manoeuvre: they have access to more types of funding, they have more fat to cut, and they have greater bargaining power with lenders. Even so, life is getting ever more uncomfortable for the bigger beasts of the corporate jungle.

According to the Federal Reserve's most recent lending survey, American banks are tightening terms more aggressively for bigger firms than for tiddlier ones (see chart). Lenders are more cautious than they have been at least since 1990. The story among European banks is similar. Lenders in emerging markets can be more suspicious of multinational firms than they are of locals. "We just don't know what they've got on their balance-sheets back home," says one bank boss in Africa.

Violent movements in exchange rates are causing additional headaches, says Andrew Balfour of Slaughter & May, a law firm. Calculations of financial ratios can be thrown out by wild currency movements, potentially triggering breaches of loan covenants. Companies with sterling-denominated credit lines may find that their facilities are not big enough as a result of the pound's recent sharp fall, for instance.



It is not panic stations yet. Most firms can survive for a while with the credit tap turned off. Analysis by Moody's, a rating agency, shows that the vast majority of highly rated companies in America and Europe have enough headroom, in the form of cash and undrawn bank facilities, to be able to survive for 12 months without needing new financing. European corporate-debt markets have seen a rare flurry of issues in the past few days by opportunistic, highly rated firms.

Governments are also working hard to prop up credit markets. The Fed's programme to buy commercial paper, a form of short-term company debt, had acquired almost $300 billion by November 26th. Banks on both sides of the Atlantic are issuing lots of government-backed bonds, which should encourage lending.

For now, an uneasy truce exists between most companies and their lenders. Some banks made tentative attempts in the autumn to pull out of loan agreements because their cost of financing had spiked so high. But they quickly backed down. In turn, banks are doing what they can to persuade corporate treasurers not to draw down credit facilities unless they have to. But hard choices are looming.

As the economic news worsens and profits dive, more firms will be at risk of breaching covenants on standard measures such as the ratio of debt to earnings before interest, tax, depreciation and amortisation. Furthermore, a good deal of debt will fall due in the next few years: Reuters Loan Pricing Corporation, a data provider, estimates that more than $1 trillion of loans will need to be refinanced globally in each of the next three years, mainly in America and Europe.

Competition for capital is bound to increase in that time, given the coming torrent of government-debt issuance. Auditors also want to be reassured about refinancing prospects well before maturity dates so they can sign off on companies as going concerns. With little obvious benefit in waiting, many expect to see a concerted effort by companies to renegotiate funding facilities early in 2009, once the year-end squeeze is over (see article).

In the face of more requests for waivers and refinancings, banks will react selectively. “We will distinguish between companies that are temporarily in crisis and those that are not,” says Alessandro Profumo, the chief executive of UniCredit, an Italian bank.

The lucky ones will still pay a hefty price for access to credit. Not only will the costs of borrowing zoom, but terms will become much tighter. Old-fashioned provisions such as “clean-up” clauses, which require borrowers to pay their debts down to zero for a specified period every year, are creeping back into some discussions. The onus is also on borrowers to show that they are taking steps to cut costs before they come to lenders for more money. Banks want to know that you have exhausted all other avenues yourself, says Sheila Smith of Deloitte, a consultancy. Even then, facilities are likely to shrink as non-bank investors such as hedge funds drop out of loan syndicates and banks that had only extended money in the hope of ancillary business also draw back.

For those firms that find doors starting to shut on them, the prospects are grim. Despite some talk of a bigger role for private placements, this is not the best time to start forging relationships with new creditors if existing ones turn unfriendly. Many firms are going into this downturn with fewer unencumbered assets than in previous recessions, which makes it harder to secure new credit. Asset disposals, one obvious way of raising cash, are extremely hard to pull off at the moment. Nor does it help that many corporate loans have been securitised and divvied up among lots of investors, making it harder for firms to negotiate modifications.

Projections for defaults are rising fast. Bain, a consultancy, now expects as many as 140 American speculative-grade companies to default in 2010, sharply up from a forecast of 40-50 in April. Worse, firms that default are likelier to end up in full liquidation. In America, debtor-in-possession financing, which helps firms that have entered Chapter 11 bankruptcy protection to meet their cash needs while they reorganise, has dried up. “The gap between financial distress and financial disaster has become much smaller,” says John Grout of the Association of Corporate Treasurers, a British trade body. So too, it seems, has the difference between big companies and small ones.

Buttonwood

Star struck

Dec 4th 2008
From The Economist print edition

A cautionary tale from within the fund-management industry

Illustration by David Simonds

“THE dullard’s envy of brilliant men is always assuaged by the suspicion that they will come to a bad end.” That line from Max Beerbohm, an Edwardian novelist, could almost have been dedicated to New Star Asset Management, a British investment group that tempted fate with its brand name and this week arranged a crisis deal with its creditors.

New Star represents the idea of active management writ large. Rather like the fantasy sports teams devised by armchair fans, its founder, John Duffield, recruited people he believed to be the best fund managers in the business. He rewarded them well for outperformance and fired them when they failed. Shrewd salesmanship encouraged investors to hand their money over to this team of titans.

For years, the idea was phenomenally successful. Assets under management grew from £5.9 billion ($10.5 billion) at the end of 2003 to £23.1 billion at the end of last year; a pre-tax loss of £13.2m in 2003 turned into a £62.8m profit last year.

But 2007 proved to be the year when New Star climbed onto the branch of history and invited the gods to saw it off. The biggest mistake was a £364m return of cash to shareholders. Of that some £110m was absorbed by employees and directors as a reward for their past success.

But the payout came at a crippling cost. By the end of last year the group had net debt of £246m. In mid-November covenants on those loans were amended in return for an extra one and a half percentage points on the interest rate. Even that proved a stopgap; on December 3rd it was announced that the banks would swap the debt for 75% of the ordinary equity and a slug of preference shares.

The second problem relates to the firm’s relentless expansion. In last year’s annual report, the launch of the International Property fund was described as “the sales highlight of 2007”. The fund, launched when investors were incredibly enthusiastic about property, was Britain’s biggest seller of the year.

Step forward to November this year and New Star was forced to suspend redemptions in the fund because it lacked the liquidity to meet the demands of investors who wanted to withdraw their money. The announcement further dented the confidence of clients and the stockmarket.

Ironically, the property fund had performed quite well relative to its peers. But launching funds at the top of cycles is one of the abiding sins of the industry. Figures analysed by Jack Bogle, founder of the Vanguard fund-management group, show a clear inverse correlation between performance and the size of a fund manager’s stable; in short, the fewer funds, the better.

Unfortunately what is best for the client is not best for the group. Its fees are directly related to assets under management. In most years, these will grow in line with the market. But if you are a quoted fund-management group and you want to push the share price higher (and reward your best managers), you need funds to grow at an above-average rate. That means launching new funds.

The third problem was the emphasis on individual managers. Some groups avoid this by emphasising a collective process for picking stocks. That way they resist being held hostage by the egos of fund managers, who may be tempted to defect to earn higher pay elsewhere. A star system also attracts hot money from financial advisers who want their clients to own the most fashionable funds.

But beating the market is an incredibly difficult trick to sustain. In many cases, early success can be down to luck; investors can be “fooled by randomness” to use the phrase of Nassim Taleb, an author. The lustre of some of New Star’s managers faded, notably that of Stephen Whittaker, the former joint chief investment officer. The hot money left as quickly as it arrived: New Star’s assets under management were £13.9 billion by the end of November, 40% down from the peak.

The ironies keep compounding. Jupiter, the group Mr Duffield deserted to form New Star, has survived and prospered in his absence. The New Star philosophy of rewarding managers with bonuses in shares, not cash, looks threadbare now that the shares will be both heavily diluted and delisted from the London Stock Exchange.

The New Star saga embodies all the sins of its industry; charging too much and paying its managers too highly, promising performance it could not deliver and launching too many funds. Gearing up its balance-sheet at the height of the credit bubble may have brought a cash bonanza for its managers but weakened the group fatally. Despite the bank rescue, its brand may now have been irredeemably tarnished.

Year-end funding

Wall Street's pawnbrokers

Dec 4th 2008 | NEW YORK
From The Economist print edition

For bankers, it is just as well Christmas comes but once a year

MONEYMEN may be hoping for some rest as an atrocious 2008 draws to a close, but for bank treasurers the “turn” is the most fretful time of year. They are often holed up in the office, frantically trying to balance the books as their colleagues head off to New Year’s Eve parties. This year is likely to be especially nerve-racking.

Liquidity always tightens in late December, when markets are closed and banks tidy up their balance-sheets. This year they will be more determined than ever to be well-groomed when the year-end accounting snapshot is taken.

The reluctance to part with cash is reflected in the London Interbank Offered Rate (LIBOR), which banks charge each other for loans. At the end of November one-month dollar LIBOR—ie, the rate on loans that stretched into January—jumped by half a percentage point, to 1.9%, after falling steadily for weeks.

An exacerbating factor this year is the demise of the investment banks. In past years, Wall Street firms would lend freely to the desperate in late December, gleefully puffing up their balance-sheets in return for juicy fees. They could do this because their fiscal years ended on November 30th, meaning they did not face the same end-of-year constraints as commercial banks.

No longer. Bear Stearns and Lehman Brothers, which provided an estimated $450 billion of stopgap funding at the end of 2007, are no more. Goldman Sachs and Morgan Stanley have turned themselves into banks (with a calendar fiscal year from 2009) and are under huge pressure to shrink their balance-sheets—all the more so for Goldman, which is expected to report its first quarterly loss of the crisis later this month. Brad Hintz of Alliance Bernstein says that what remains of the securities industry will provide at most $670 billion this year, one-third less than in 2007.

Nor does it help that lenders have become very choosy about collateral. In August 2007 a typical asset-backed security would secure a loan worth 95% of its face value; now it fetches a mere 30%. The amount on investment-grade corporate bonds has fallen from 97% to 85%. As for exotic mortgage-backed paper, forget it.

This leaves central banks having to step into the breach, as they did last December when interbank rates exploded. With their arsenal of newfangled liquidity facilities, the monetary authorities think they have the problem under control. “We’ve got into the habit of over-providing in the run-up to possible choke-points,” says an official.

Two of their most useful weapons are the Federal Reserve’s Term Auction Facility (TAF) and swap lines providing foreign central banks with dollars. These have already provided a combined $825 billion of over-the-turn funding. The latest $150 billion TAF auction was undersubscribed, suggesting that there is, for now, no panic among banks. But there is likely to be more jostling at the last two auctions of the year, on December 15th and 29th.

Even if no big firms are caught out on December 31st, it will be too early for their treasury teams to pop corks. Few believe credit markets will spring back to normal as 2009 dawns. Those with spare cash will remain wary of lending it until it is clearer how much capital they will need. That point is months, not weeks, away.

Oil

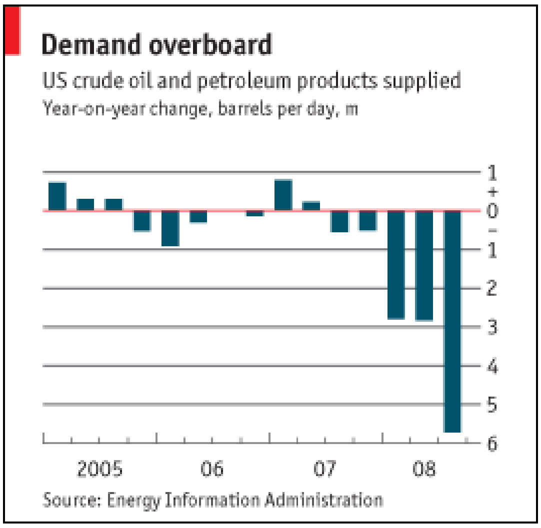
Plumbing the depths

Dec 4th 2008
From The Economist print edition

OPEC has its work cut out to stop the oil price from sinking further

ENERGY analysts spent the first half of the year debating how expensive oil could get. Now they are asking the opposite question. On December 2nd the price of a barrel slipped below $47, the lowest level since May 2005 and less than a third of the peak reached in July.

The main reason for the slump is the darkening outlook for the world economy. Demand for oil continues to grow in a few spots, such as China. But in most places it is falling. America's appetite for oil, for example, had been more or less stagnant for the past few years, but has recently dropped dramatically (see chart). Many now expect global oil demand to fall next year, and perhaps even this year—which would be the first decline since 1993. Meanwhile, several new oilfields and refineries, which were set in motion when the price seemed likely only to rise, are due to start up in the coming months, increasing supply just as demand atrophies.



The Organisation of the Petroleum Exporting Countries (OPEC) does not seem able to cut its production fast enough to keep pace with all this grim news. In October the cartel agreed to pump 1.5m fewer barrels each day from November 1st, reducing global supply by about 2%. But that cut is only just beginning to take effect, since it can take more than a month for tankers to reach their destinations. Moreover, OPEC's members do not yet seem to be complying fully with their diminished quotas.

The king of Saudi Arabia recently said that $75 a barrel would be a fair price—an idea that other members of the cartel have echoed with enthusiasm. Oil's plunge has left many of them in dire fiscal straits. This suggests that when the group meets again on December 17th, it will resolve to cut its production further. But Saudi Arabia will not want to bear all the cost, so it will insist that other big producers, such as Iran and Venezuela, should not only agree to further cuts of their own but also implement them.

Michael Lewis of Deutsche Bank argues that OPEC's past efforts to prop up prices have succeeded more often than not. Since 1993, cuts in production have led to higher prices on three-quarters of occasions. The exceptions, however, have occurred when the world economy has slowed unexpectedly—most notably in 1998, after the Asian crisis, and in 2001, after the dotcom bubble burst. On those occasions, the price kept falling for more than six months after OPEC first began reducing its output. In 2001, for example, the cartel had to resort to a series of cuts, totalling 5m barrels, before the price finally began to recover.

If events take a similar turn this time, Mr Lewis reckons, OPEC will have to keep cutting its output for another year. The price may not hit rock bottom until early 2010. But the world economy looks less healthy now than it did in 2001, so OPEC may face even more of a struggle this time, he thinks. Deutsche Bank, for one, sees prices falling as low as $35 at times between now and then. After adjusting for inflation, Mr Lewis points out, that would only take the price back to its average level since 1972.

Monetary policy

Passive aggression

Dec 4th 2008
From The Economist print edition

The ECB's biggest-ever cut looks timid

WHEN the economy is sinking and inflation fading rapidly, is there any merit in cutting interest rates gradually? On December 4th the Bank of England again opted for boldness. It cut its benchmark rate by a percentage point, to 2%, following a stunning one-and-a-half-point reduction a month earlier. On the same day Sweden's central bank slashed its rate, from 3.75% to 2%, and said big cuts were needed because monetary policy was less effective than usual. But the European Central Bank (ECB) was stuck somewhere between caution and boldness. Less than an hour after the Bank of England's decision, the ECB reduced its main rate by three-quarters of a percentage point, to 2.5%. That was the biggest cut in its ten-year history. It may look daring, but in the circumstances seems inadequate.

One reason for the Bank of England's haste is that the British economy, with its housing bust and exposure to financial services, is falling fast. Yet the euro area is struggling almost as badly. A closely watched index of activity, based on surveys of purchasing managers in manufacturing and services, slumped in November to its lowest level ever. That suggests euro-area GDP is shrinking fast, and for a third successive quarter. Business and consumer confidence is at a 15-year low, according to a survey by the European Commission. Unemployment is rising—rapidly in Spain, but also now in France, where the jobs market had seemed resilient.

The ECB's remit is to stabilise inflation, not the economy. But inflation is no longer a barrier to big rate cuts and the bank needs to act to ensure it does not fall too low. On a first estimate, inflation fell in November to 2.1% from 3.2%, the biggest drop in decades. It may well fall below the ECB's 2% target ceiling in coming months.

With news this grim, why not cut interest rates by more? In a speech last month, Lorenzo Bini Smaghi, of the ECB's rate-setting council, argued against a hyperactive monetary policy. A big rate cut, he said, is more likely to drain confidence than perk it up, if "it is interpreted as a signal that the central bank has a more pessimistic assessment of the economy than market participants". A central bank that acts aggressively to insure against deflation could cement expectations of it, making that outcome more, not less, likely. Policymakers who slash rates at the first sign of danger will quickly run out of "ammunition", he said.

Yet the immediate outlook for the economy is so bleak that there seems little merit in holding fire. In America the Federal Reserve has hardly any room left for bold cuts: its target rate is at 1% but the actual rate is lower. Even so, the Fed's policy of pushing vast sums of cash into the economy has shown that monetary-policy options are not exhausted even when interest rates approach zero. *The Economist* went to press before Jean-Claude Trichet, the ECB's president, had held his usual press conference, but the bank seemed likely to cut rates again at its next rate-setting meeting on January 15th. Many will ask what argument will make a lower rate sensible then that is not compelling now.

Global house prices

Popping sounds

Dec 4th 2008
From The Economist print edition

House prices are falling just about everywhere

"WHAT happens here, stays here" is a slogan used to attract tourists to Las Vegas. Sadly, it is not true of the state of the city's housing market. In September, they were 31.3% lower than a year ago, according to an S&P/Case-Shiller index of American house prices, and Vegas's problems are now spreading all over the world. According to our house-price indicators (see chart), America's housing market is leading the way down for the 20 countries covered. But the situation is even worse than it appears. Compared with the second quarter, prices fell in 11 of the 16 countries for which third-quarter data are available. Research suggests that a long, global slump lies ahead.

The Economist's house-price indicators
% change

	Latest (on a year earlier)	Q3 2007 (on a year earlier)	1997-2008 or latest
Hong Kong	14.6	12.2	-26
Singapore	8.3	27.6	na
Belgium	7.5	11.0	147
Switzerland	3.7	2.3	23
Australia	2.8	11.4	169
France	2.8	5.7	150
Netherlands	2.3	3.1	105
Sweden	2.0	11.6	153
China	1.6	8.2	na
Germany	1.4	-3.1	na
Canada	1.4	6.3	70
South Africa	1.2	15.0	398
Italy	1.1	5.1	104
Spain	0.4	5.3	191
Japan	-1.8	-0.7	-33
Denmark	-2.7	2.7	124
United States *(OFHEO)*	-4.0	1.8	85
New Zealand	-6.8	11.4	105
Ireland	-10.2	-1.8	201
Britain	-13.9	9.5	168
United States *(Case-Shiller national index)*	-16.6	-4.4	79
United States *(Case-Shiller ten-city index)*	-18.6	-4.9	116

Sources: ABSA; ESRI; Hypoport; Japan Real Estate Institute; Nationwide; Nomisma; NVM; OFHEO; Quotable Value; Stadim; Swiss National Bank; Standard & Poor's; government offices

In America, the collapse is striking both for its severity and its breadth: home prices fell in every city covered by Case-Shiller's 20-city composite index in September. On a more positive note, America's Mortgage Bankers Association said on December 3rd that home-loan applications, which are an early indication of demand for housing, surged at the end of November. This followed a fall in long-term rates after the Federal Reserve pledged to buy up to $500 billion of mortgage-backed securities issued by government-sponsored entities such as Fannie Mae and Freddie Mac, and $100 billion of their debt. However, many such loan applications are turned down, especially in tough economic times.

For an indication of how far the downturn has spread, look at China. House prices are still slightly higher than they were a year ago, but in the third quarter they fell. In big cities, the picture is even worse. Shanghai's house prices fell by 19.5% in the third quarter, says Savills, a global property company. Construction of homes, offices and factories fell by 16.6% in October, according to Macquarie Securities. The firm expects construction activity to slump 30% in 2009, after a 9% expansion in the first nine months of this year.

Barclays Capital says house prices may fall by about 15% over the next two years, hitting their long-term trend levels next year, then overshooting on the downside for another year. Those hoping to bet on a turn in the market may have more luck at a Vegas blackjack table.

Economics focus

The teetotallers' hangover

Dec 4th 2008
From The Economist print edition

High saving and low private-sector debt have not shielded Germany and Japan from recession

PAUL KRUGMAN, the winner of this year's Nobel prize in economics, put his finger on something in the 1990s when he identified, and then ridiculed, the notion that a slump is a "necessary punishment" for the excesses of the boom that went before it. The popular idea of recession as purgative—the hangover following an ill-judged binge—has a strong and enduring emotional appeal. It allows distressed consumers in America and Britain, countries with a shared weakness for untrammelled spending and reckless borrowing, to make sense of the unfolding crisis. Recession, they reason, must be a penance for past profligacy.

However, such logic is of little use in Germany and Japan, two big and rich countries that did not succumb to the boom's vices, but are nevertheless facing nasty recessions. Each avoided the credit expansion, consumer frenzy, house-price bubbles and trade deficits indulged in by many of their peers. Both went into the downturn less burdened by private-sector debt and with hefty current-account surpluses (see left-hand chart). Yet prudence has not spared them: both economies contracted in the second and third quarters, and seem set for a further retreat in the current one. The OECD forecasts that Japan's economy will grow by just 0.5% this year, and will shrink by 0.1% in 2009. It thinks GDP in Germany will fall by 0.8% next year.

The latest data support such a gloomy forecast. In November, Germany's purchasing-managers index (PMI), a gauge of manufacturing's vitality, slumped to a level scarcely higher than that of sinful Britain, which is also at a record low. A survey by Ifo, a research institute, shows companies are gloomier than ever about near-term prospects. Foreign orders for plant and machinery are down by almost a fifth from a year earlier, according to VDMA, an industry group. Retail sales plunged in October.

Japan's economy is in the dumps too. Its manufacturing PMI fell for the ninth consecutive month in November, to a new and alarming low. Sales of vehicles, including cars, fell by more than a quarter from a year earlier. A slump in exports helped push the trade balance into a rare deficit in August and again in October. Bankruptcies are rising amid signs of a corporate credit crunch. Anxious about the supply of credit to firms, the Bank of Japan agreed on December 2nd to accept riskier corporate bonds as collateral when it lends to commercial banks.

How did these countries get dragged so deeply into the mire? While consumers and firms in debt-ridden America and Britain scramble for cash and cut spending to shore up their frail finances, prudent Germany and Japan should be well placed to survive a credit drought. Their companies in aggregate regularly run

cash surpluses—they spend less than they earn—and so are in a better position to hang on to their employees through the downturn. Unemployment has been stable in Germany, even as it rises in France, Italy and Spain. Consumers are not the spent force they are elsewhere so there ought to be some pent-up demand. Weak consumption during the global upswing was down to low real-wage growth, as well as caution: falling inflation should lift real income and spending.

The trouble is, surplus countries have become used to living off the spending of others. They are credit-crunch victims, but at a remove—suffering because their overseas customers are cutting back. In the fat years for the world economy from 2003, Japan remained heavily reliant on exports and investment to drive prosperity, while Germany's dependence on them steadily increased. German firms sold into the credit-fuelled consumer booms of America, Britain and Spain, supplying high-quality cars and other durable goods. The capital-goods industry in both countries benefited from infrastructure spending in fast-growing developing economies, such as China, and by cash-rich oil exporters. Since consumer spending accounts for a small—and, in Germany, declining—share of GDP by rich-country standards (see right-hand chart), investment at home was driven largely by hopes of foreign sales. But now that foreign orders have dried up, firms are trimming their own capital spending.

Save hard for a rainy day; save harder when it pours

There should be plenty of scope for more domestic demand, but the instinct for saving hardens in a downturn. Consumers are unlikely to spend more when wealth is shrinking and they worry that jobs may migrate to neighbours with lower wage costs. Firms are also big savers in Germany and Japan, and seem equally minded to cling to cash in uncertain times. Even wealth and solvency seem to be drawbacks. Creditor nations are havens for capital in a downturn, with some perverse consequences. Flows into Japan have pushed up the yen, squeezing profits on exports and making firms less likely to invest. Skittish investors are keen buyers of Germany's government paper, too, driving bond yields down. But lower borrowing costs are of little use if politicians remain sceptical about the merits of fiscal pump-priming.

Countries that have lived beyond their means may feel a justifiable remorse as their booms turn to bust. Surplus countries are simply stupefied by their plight. They should not be. A persistent current-account surplus is a symptom of unbalanced growth, just as a big deficit is. Countries that save too little to cover their capital spending are at the mercy of foreign investors; countries that save too much are at the mercy of foreign demand. China gets barracked for its current-account surplus, which was $372 billion last year, according to the IMF. Yet the combined surpluses of Germany and Japan amounted to a vast $463 billion.

If the world economy is to adjust to higher saving in shopaholic deficit countries, such as America, it will require surplus nations to stimulate their domestic spending. Germany, unlike Japan, can at least benefit from lower interest rates: on December 4th the European Central Bank cut them by 0.75 percentage points to 2.5%. It can also afford a much bigger fiscal stimulus than it has announced so far. Japan is far more constrained by its huge public-sector debt. But both countries can start by shaking off the mindset that demand has to come from somewhere else.

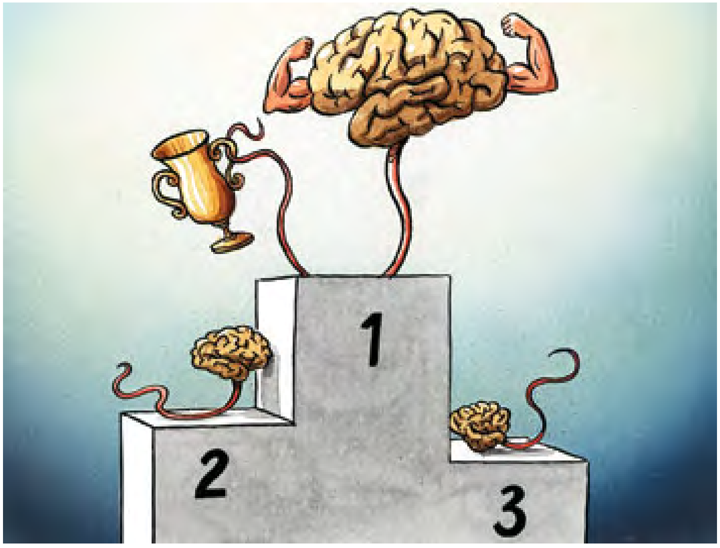
Evolution

Balls and brains

Dec 4th 2008
From The Economist print edition

The quality of a man's sperm depends on how intelligent he is, and vice versa

Illustration by Peter Schrank



THERE are few better ways of upsetting a certain sort of politically correct person than to suggest that intelligence (or, rather, the variation in intelligence between individuals) is under genetic control. That, however, is one implication of a paper about to be published in *Intelligence* by Rosalind Arden of King's College, London, and her colleagues. Another is that brainy people are intrinsically healthier than those less intellectually endowed. And the third, a consequence of the second, is that intelligence is sexy. The most surprising thing of all, though, is that these results have emerged from an unrelated study of the quality of men's sperm.

Ms Arden is one of a group of researchers looking into the connections between intelligence, genetics and health. General intelligence (the extent to which specific, measurable aspects of intelligence, such as linguistic facility, mathematical aptitude and spatial awareness, are correlated in a given individual) is measured by psychologists using a value called Spearman's *g*. Recently, it has been discovered that an individual's *g* value is correlated with many aspects of his health, up to and including his lifespan. One possible explanation for this is that intelligent people make better choices about how to conduct their lives. They may, for example, be less likely to smoke, more likely to eat healthy foods or to exercise, and so on.

Alternatively (or in addition) it may be that intelligence is one manifestation of an underlying, genetically based healthiness. That is a view held by many evolutionary biologists, and was propounded in its modern form by Geoffrey Miller of the University of New Mexico, who is one of Ms Arden's co-authors (and, as it happens, her husband). These biologists believe intelligence, as manifested in things like artistic and musical ability, is such a reliable indicator of underlying genetic fitness that it has been chosen by members of the opposite sex over the millennia. In the ensuing arms race to show off and get a mate it has been exaggerated in the way that a peacock's tail is. This process of sexual selection, Dr Miller and his followers believe, is the reason people have become so brainy.

Hitting the g spot

Ms Arden sought to test this idea in a way that excluded intelligent choice and got directly at any correlations between intelligence and health that operate at the physiological level. She chose sperm quality because it is both easily measured and about as far from intelligent choice as it is possible to

imagine—and because the relevant data had already been collected.

Her retrospective “volunteers” were former American soldiers enrolled in what was known as the Vietnam Experience Study. In 1985 almost 4,500 veterans of that war volunteered for extensive medical and mental examinations. Some of them gave semen samples that were analysed for sperm concentration (ie, number of sperm per cubic centimetre), sperm count (ie, total number of sperm in the ejaculate) and sperm motility.

Ms Arden found 425 cases where samples had been collected and analysed from unvasectomised men who had managed to avoid spilling their seed during the collection process and had answered all the necessary questions for her to test her hypothesis, namely that their *g* values would correlate with all three measures of their sperm quality.

They did. Moreover, neither age nor any obvious confounding variable that might have been a consequence of intelligent decisions about health (obesity, smoking, drinking and drug use) had any effect on the result. Brainy men, it seems, do have better sperm.

By implication, therefore, they have fitter bodies over all, at least in the Darwinian sense of fitness, namely the ability to survive, to attract mates and to produce offspring. That is an important finding. Hitherto, biologists have tended to disaggregate the idea of fitness into a series of adaptations that are more or less independent of each other. This work adds to the idea of a general fitness factor, *f*, that is similar in concept to *g*—and of which *g* is one manifestation. To him that hath, in other words, shall be given. Unfortunately for the politically correct, Dr Miller’s hypothesis looks stronger by the day.

Circadian rhythms

Going back in time

Dec 4th 2008
From The Economist print edition

A new drug may prevent jet lag

THE curse of jet lag has struck most international travellers at one time or another—and anyone lucky enough to have avoided it will surely have suffered the equally unpleasant sleep-deprivation involved in an early-morning start. Nor, as shift workers know too, is it possible to escape by going to bed earlier the previous evening, and thus putting sleep in the bank. Sleepiness is controlled by the body's internal biological ("circadian") clock, so an earlier bedtime just means several wakeful hours staring in frustration at a darkened ceiling.

For years, some travellers and shift workers have sworn by melatonin. This is a hormone that regulates the biological clock. It is made in the brain by a structure called the pineal gland, as darkness sets in after sunset. Light is the most potent cue for keeping the biological clock in synch with solar time. The clock then tells the brain when to go to sleep. The theory of those who use melatonin is that an external dose of it can reset the clock, and thus cause the "go to sleep" signal to be sent at a more convenient moment. Melatonin can also increase sleepiness during the day, when the pineal gland is not producing it.

This has resulted in a growing, and often unregulated, market in melatonin-supplement tablets. The pharmaceutical industry's response to this seems to be: "if you can't beat 'em, join 'em". A paper in this week's *Lancet*, by Shantha Rajaratnam of the Harvard Medical School and his colleagues, reports two trials, funded by drug companies, of tasimelteon, a substance that binds to the same receptors in the brain as melatonin does, and which it is expected will have a similar effect.

In the course of these trials, more than 400 people had their bedtimes brought forward by five hours in controlled conditions. Half an hour before lights out, a quarter of them were given a placebo, while the remaining three-quarters were given varying doses of tasimelteon.

Dr Rajaratnam and his colleagues report that the new drug let people fall asleep faster at the unnaturally early time, and also allowed them to sleep longer than those given the placebo. Volunteers who took the drug had between 30 minutes and two hours more sleep than those on the placebo, with the largest dose inducing the greatest effect. Physiologically, the drug was observed to advance the body's natural melatonin-production cycle, and also the pattern of "rapid-eye-movement" sleep, during which most dreaming takes place, and which is believed to be important for the consolidation of memories. Tasimelteon is not, in other words, merely acting as a sedative in the way that benzodiazepines such as diazepam and temazepam do. This is important, says Dr Rajaratnam's colleague Elizabeth Klerman, because "we want to treat the underlying cause of jet lag or shift-work disorder: the misalignment of the inner circadian clock with the external environmental time."

It is not only travellers and shift workers who might benefit if tasimelteon leaps all the hurdles that remain before it can be approved. Sleep problems also beset the elderly and the blind. Indeed, one melatonin analogue, called ramelteon, is already used to treat chronic insomnia.

If tasimelteon does pass muster (one gap in these studies is that the daytime effects of taking it, such as the risk of increased sleepiness, have not been looked at) it will be good news for the sleepless. So will the prospect of a simple solution to the melatonin-reducing effects of artificial lighting in rooms and from televisions and computer screens. It turns out that it is the short wavelengths of light (the blues) that are most responsible for fooling the pineal gland into thinking the sun is still above the horizon. It may turn out that a natural way to boost melatonin production is to wear orange glasses in the evening.

Driving and mobile phones

Just shut up, will you

Dec 4th 2008
From The Economist print edition

Using even a hands-free phone while driving can be dangerous

MANY countries have made it illegal to natter into a hand-held mobile phone while driving. But the latest research provides further confirmation that the danger lies less in what a motorist's hands do when he takes a call than in what the conversation does to his brain. Even using a "hands-free" device can impair a driver's attention to an alarming extent.

Melina Kunar of the University of Warwick, in England, and Todd Horowitz of the Harvard Medical School ran a series of experiments in which two groups of volunteers had to pay attention and respond to a series of moving tasks on a computer screen that were reckoned equivalent in difficulty to driving. One group was left undistracted while the other had to engage in a conversation about their hobbies and interests using a speakerphone. As Dr Kunar and Dr Horowitz report in *Psychonomic Bulletin & Review*, those who were making the equivalent of a hands-free call had an average reaction time 212 milliseconds slower than those who were not. That, they calculate, would add 5.7 metres (18 feet) to the braking distance of a car travelling at 100kph (62mph). The researchers also found that the group using the hands-free kit made 83% more errors in their tasks than those who were not talking.

To try to understand more about why this was, they tried two further tests. In one, members of a group were asked simply to repeat words spoken by the caller. In the other, they had to think of a word that began with the last letter of the word they had just heard. Those only repeating words performed the same as those with no distraction, but those with the more complicated task showed even worse reaction times—an average of 480 milliseconds extra delay. This, the researchers suggest, shows that when people have to consider the information they hear carefully, as they might when making decisions about a business deal, it can impair their driving ability significantly.

But does chatting to passengers have the same detrimental effect on driving? An earlier study found that it does not. That research, led by Frank Drews of the University of Utah, analysed the performance of young drivers using a vehicle simulator. Dr Drews found that when using a hands-free phone, a volunteer "drove" significantly worse than he did when just talking to someone playing the role of a passenger. Passengers, the researchers believed, might even help road safety by commenting on surrounding traffic.

Dr Kunar and Dr Horowitz also explored the effect of simply listening to something—such as a radio programme. For this they played a recording of the first chapter of Bram Stoker's "Dracula". Even though the test subjects were told to pay attention because they would be asked questions about the story afterwards, it had little effect on their reaction times. Dr Kunar reckons that having to think about responses during a phone conversation competes for the brain's resources in a way that listening to a monologue does not. Dr Drews's work suggests the same thing is true of the idle chatter of a passenger.

This could mean road-safety advice needs to be revised. America's National Highway Traffic Safety Administration estimates that the use by motorists of hand-held phones is continuing to increase: to 6% of drivers at any given time in 2007, from 5% the previous year. The biggest culprits are aged 16 to 24. People texting while driving, or fiddling with an iPod, also worry safety officials. Now it appears that talking on a phone even when both hands are on the steering wheel is dangerous too.

Punishing people for using hand-held gadgets while driving is difficult enough, even though they can be seen from outside the car. Stopping people making hands-free calls would probably be impossible—not least because more and more vehicles are now being fitted with the necessary equipment as standard. Persuading people to switch their phones off altogether when they get behind the wheel might be the only answer. Who knows, they might even come to enjoy not having to take calls. And they'll be likelier to arrive in one piece.

Astronomy

Watching and waiting

Dec 4th 2008
From The Economist print edition

The search for dangerous asteroids is about to begin in earnest

University of Hawaii

EVER since 1980, when Luis and Walter Alvarez came up with the idea that the dinosaurs had been wiped out when the Earth was hit by an asteroid, people have worried that something similar might happen again. Indeed, on a much smaller scale it did, 100 years ago. In 1908 an object about 50 metres (150 feet) across entered the atmosphere above Siberia. When it blew up it flattened some 2,000 square kilometres (800 square miles) of forest.

Experts in the field put the chances of a 1908-style event happening some time this century at about one in ten. That would be devastating if it occurred over a densely populated area—of which there are many more than there were a century ago. This, plus the more remote chance of a big collision, has stimulated efforts to map the orbits of potential threats so that people will be prepared. They might, by attaching rocket motors to the incoming rock, or nudging its orbit with nuclear explosions, even be able to avert disaster. Until now, these efforts have been carried out with existing telescopes, and researchers think they have found about three-quarters of the 1,000 or so neighbouring asteroids that have a civilisation-wrecking diameter of 1km or more. But to locate the rest, and to look for smaller objects that could still wreak local devastation, they need more specialised tools.

This month they will start to get them. On December 6th the University of Hawaii will activate a telescope designed specifically to look for dangerous asteroids. It is called PS1, a contraction of Panoramic Survey Telescope & Rapid Response System, and it is the first of four such instruments that will be used to catalogue as many as possible of the 100,000 or so near-Earth asteroids that measure between 140 metres and a kilometre across.

A typical telescope is designed to peer at a tiny portion of the sky. That is fine for examining things in detail, but not so good for a general search. PS1 and its colleagues will therefore take in large chunks of the heavens at one go. Together, they will look at blocks about 35-times the size of the full moon. They are able to do so because they are fitted with special digital cameras whose electronics were developed at the Massachusetts Institute of Technology's Lincoln Laboratory. Each camera has about 1.4 billion pixels. A typical shop-bought digital camera, by comparison, has about 5m pixels. The complete array of telescopes will be able to survey the entire night sky visible from Hawaii about once a week. Comparisons of successive scans should reveal the movement of objects and thus the locations and orbits of the target asteroids.

The other three telescopes should be completed by 2012, at a cost of about $100m for all four. They should take about ten years to catalogue 90% of the remaining dangerous asteroids thought to be out there. And even if no killer asteroids are found, the money will not have been wasted. The telescopes will also be good at spotting supernovae and gamma-ray bursts. With luck, none of these will be close enough

to damage the Earth.

Books of the year

Pick of the pile

Dec 4th 2008
From The Economist print edition

Illustration by Daniel Pudles

The best books of 2008 covered the Iraq war, Chinese capitalism, Mississippi blues, fishing in Sweden, ayatollahs, human waste and the secret life of words

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Politics and current affairs

The Fall and Rise of the Islamic State.
By Noah Feldman.
Princeton University Press; 200 pages; $22.95 and £13.50

A short, incisive and elegant book by a Harvard specialist in Islamic political thought, which analyses the dilemma posed by the huge popular support, among many Muslims, for explicitly Islamic forms of government.

A Choice of Enemies: America Confronts the Middle East.
By Lawrence Freedman.
PublicAffairs; 624 pages; $29.95. Weidenfeld & Nicolson; £20

The region’s key events provide ample material for this subtle re-examination: the fall of the shah, the three wars in the Persian Gulf, *jihad* in Afghanistan, Jimmy Carter's half-success at peacemaking at Camp David in 1978 and Bill Clinton's failure there two decades later.

Britain Since 1918: The Strange Career of British Democracy.
By David Marquand.
Weidenfeld & Nicolson; 496 pages; £25

A rich, compelling and convincing account of recent British political history by a man who has experienced it as a member of parliament, a journalist and a distinguished academic historian.

The Three Trillion Dollar War: The True Cost of the Iraq Conflict.
By Joseph E. Stiglitz and Linda J. Bilmes.
Norton; 311 pages; $22.95. Allen Lane; £20

With the patience of auditors and the passion of polemicists, two academics, one a Nobel prize-winning economist and the other a public-finance expert at Harvard's Kennedy School of Government, take an unflinching look at the hidden cost of invading Iraq.

The Dark Side: The Inside Story of How the War on Terror Turned into a War on American Ideals.
By Jane Mayer.
Doubleday; 400 pages; $27.50 and £22.85

A comprehensive and compelling examination of how a handful of officials, working in extreme secrecy, even from their colleagues, prosecuted the war on terror, undermining America's civil liberties.

Law and the Long War: The Future of Justice in the Age of Terror.
By Benjamin Wittes.
Penguin Press; 305 pages; $25.95

How the Bush administration came to adopt the tactics that became the hallmark of its struggle against al-Qaeda and its ilk.

India: The Emerging Giant.
By Arvind Panagariya.
Oxford University Press; 544 pages; $39.95 and £19.99

An analysis of how Manmohan Singh, first as finance minister and now as prime minister, sought to fight India's poverty with sweeping reforms aimed at promoting rapid economic growth.

Dinner with Mugabe: The Untold Story of a Freedom Fighter Who Became a Tyrant.
By Heidi Holland.
Penguin; 280 pages; $30 and £17.99

The most intimate account yet published of Robert Mugabe's transformation from liberation hero to reviled despot.

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Economics and business

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The Trillion Dollar Meltdown: Easy Money, High Rollers, and the Great Credit Crash.
By Charles R. Morris.
PublicAffairs; 224 pages; $22.95 and £13.99

The first big book on the credit crunch saw the crisis coming three years ago. Freak-out-onomics for I-told-you-sos.

Capitalism with Chinese Characteristics: Entrepreneurship and the State.
By Yasheng Huang.
Cambridge University Press; 366 pages; $30 and £15.99

Convincingly overturns the usual analyses of the nature of China's economy, and brilliantly predicts, a year ahead of other commentators, its steep decline.

When Markets Collide: Investment Strategies for the Age of Global Economic Change.
By Mohamed El-Erian.
McGraw Hill; 304 pages; $27.95 and £15.99

Ignore the in-your-face cover. This is a fluent and intelligent account of the credit crisis: why it happened and how to survive it. Winner of the 2008 *Financial Times* and Goldman Sachs business book of the year award.

The Venturesome Economy: How Innovation Sustains Prosperity in a More Connected World.
By Amar Bhidé.
Princeton University Press; 520 pages; $35 and £19.95

A counterintuitive view of technology and globalisation that will delight those who believe that American innovation is insulated from economic ups and downs.

The Logic of Life: The Rational Economics of an Irrational World.
By Tim Harford.
Random House; 272 pages; $25. Little, Brown; £18.95

Neither too lofty nor dumbed down, this is a fascinating study of how society is shaped by hidden pay-offs and punishments.

Grown Up Digital: How the Net Generation is Changing Your World.
By Don Tapscott.
McGraw-Hill; 384 pages; $27.95 and £15.99

A management guru explains why the net generation, who grew up playing video games and spending time on the internet, are not all messed up, as many people suspect, but have actually been improved by the experience.

Illustration by Daniel Pudles

Globality: Competing with Everyone from Everywhere for Everything.
By Hal Sirkin, Jim Hemerling and Arindam Bhattacharya.
Business Plus; 304 pages; $26.99 and £18.99

Hal Sirkin and two colleagues explore how rich-country multinationals face increasingly effective competition from new emerging-market corporate champions, which compete not just on lower costs but also on greater ingenuity and efficiency.

The Partnership: The Making of Goldman Sachs.
By Charles D. Ellis.
Penguin Press; 752 pages; $37.95. Allen Lane; £25

Goldman Sachs has long set the gold standard in finance, even though the current crisis nearly brought it down. With unprecedented access to insiders, Charles Ellis provides the best account yet of the rise of this investment bank and what makes it tick.

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History

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The Return of History and the End of Dreams.

By Robert Kagan.
Knopf; 128 pages; $19.95. Atlantic Books; £12.99

A short, simple book arguing that we are now back in a world of clashing national ambitions and interests; not so different from the 19th century.

A Splendid Exchange: How Trade Shaped the World.
By William J. Bernstein.
Atlantic Monthly Press; 467 pages; $30. Atlantic Books; £22

Globalisation often gets a bad press, so it is interesting to read this hymn to commercial exchange that shows how, largely for better, sometimes for worse, our world has been defined by trade.

Freedom for the Thought that We Hate: A Biography of the First Amendment.
By Anthony Lewis.
Basic Books; 240 pages; $25 and £14.99

A concise and wise presentation of the history and scope of freedom of thought in the United States, with conclusions that are well worth pondering.

The Age of Wonder: How the Romantic Generation Discovered the Beauty and Terror of Science.
By Richard Holmes.
Harper Press; 380 pages; £20. To be published in America by Pantheon Books in July

A dazzling cornucopia exploring the impact of discovery upon such great Romantic writers as Mary Shelley, Samuel Taylor Coleridge, Lord Byron and John Keats.

Masters and Commanders: How Roosevelt, Churchill, Marshall and Alanbrooke Won the War in the West.
By Andrew Roberts.
Allen Lane; 720 pages; £25. To be published in America by Harper in May

Andrew Roberts lays claim to the title of Britain's finest contemporary military historian with this important analysis of grand strategy during the second world war, which, among other delights, vindicates that much maligned British way of doing things: the committee.

Out of Mao's Shadow: The Struggle for the Soul of a New China.
By Philip P. Pan.
Simon & Schuster; 368 pages; $28. Picador; £14.99

Detailed profiles of 11 Chinese, mostly present day, which together provide a not very pretty snapshot of China's political development. One of the best descriptions of what life has been like for many Chinese citizens during the past 15 years.

Modern China: The Fall and Rise of a Great Power, 1850 to the Present.
By Jonathan Fenby.
Ecco Books; 816 pages; $34.95. Published in Britain as "The Penguin History of Modern China"; Allen Lane; £30

The extraordinary growth in China's population, economic productivity and military grasp has not been matched, to anything like the same extent, by developments in the way the country is governed. Jonathan Fenby has written a much-needed new history that points to a coming crisis.

The White War: Life and Death on the Italian Front 1915-1919.
By Mark Thompson.
Faber & Faber; 464 pages; £25. To be published in America by Basic Books in March

A startling indictment of the Italian state's conduct during the first world war, which shows how Italy's nationalist dream of expansion would turn into the Fascist nightmare.

The Blackest Streets: The Life and Death of a Victorian Slum.

By Sarah Wise.
The Bodley Head; 240 pages; £20

An affecting history of life in the crowded slums of 19th-century London which traces, with great restraint, the links between poor housing, poverty and criminality.

Empires of the Sea: The Siege of Malta, the Battle of Lepanto, and the Contest for the Centre of the World.
By Roger Crowley.
Random House; 368 pages; $30. Faber and Faber; £20

How the clash of civilisations between Christianity and Islam came to be fought out during the Ottoman sieges of Rhodes and Malta and the battle of Lepanto, with some fairly familiar faults on both sides already becoming visible more than 500 years ago.

American Rifle: A Biography.
By Alexander Rose.
Delacorte Press; 512 pages; $30

How and why American soldiers have learnt to shoot straight.

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Biography

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Nixonland: The Rise of a President and the Fracturing of America.
By Rick Perlstein.
Scribner; 896 pages; $37.50 and £25

Americans supported Richard Nixon because of his anger and resentment, not despite it. Rick Perlstein offers compelling evidence for a simple but convincing thesis about Nixon's appeal.

The World Is What It Is: The Authorised Biography of V.S. Naipaul.
By Patrick French.
Knopf; 576 pages; $30. Picador; £20

An elegant and insightful study of the Trinidad-born Nobel laureate who made his name as a novelist and chronicler of India and the Islamic world. A singular example of how good authorised biographies can, and should, be.

Soul of the Age: A Biography of the Mind of William Shakespeare.
By Jonathan Bate.
Random House; 496 pages; $35. Viking; £25

It is almost impossible to write something fresh about William Shakespeare. Yet Jonathan Bate has succeeded, with a sparkling and arresting portrait of the Bard and his world as discovered in his writings.

White Heat: The Friendship of Emily Dickinson & Thomas Wentworth Higginson.
By Brenda Wineapple.
Knopf; 432 pages; $27.95 and £27.95

A portrait of a friendship that is also a sweeping cultural and political history of the lead-in to the American civil war and its aftermath.

Chagall: A Biography.
By Jackie Wullschlager.
Knopf; 608 pages; $40. Allen Lane; £30

Manages to be both magical and utterly credible in describing an artist who put fiddlers on the roof and made lovers fly through the air.

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Science and technology

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The Big Necessity: The Unmentionable World of Human Waste and Why It Matters.
By Rose George.
Metropolitan Books; 304 pages; $26. Portobello Books; £12.99

A frank and illuminating look at a generally neglected, but very important, aspect of human life.

The Princeton Companion to Mathematics.
Edited by Timothy Gowers, June Barrow-Green and Imre Leader.
Princeton University Press; 1,008 pages; $99 and £60

This is a panoramic view of modern mathematics. It is tough going in some places, but much of it is surprisingly accessible. A must for budding number-crunchers.

Bad Science.
By Ben Goldacre.
Fourth Estate; 352 pages; £12

A fine lesson in how to skewer the enemies of reason and the peddlers of cant and half-truths.

The Sun and the Moon: The Remarkable True Account of Hoaxers, Showmen, Duelling Journalists, and Lunar Man-Bats in Nineteenth-Century New York.
By Matthew Goodman.
Basic Books; 384 pages; $26 and £15.99

In retelling the story of how, in the 1830s, the *New York Sun* tried to persuade its readers there was life on the moon, Matthew Goodman vividly brings to life a town on the brink of becoming a world-class city.

Illustration by Daniel Pudles

Nudge: Improving Decisions About Health, Wealth, and Happiness.
By Richard H. Thaler and Cass R. Sunstein.
Yale University Press; 304 pages; $26 and £18

How behavioural economics affects everything—from what we eat in restaurants to our investments and pension choices.

Fatal Misconception: The Struggle to Control World Population.
By Matthew Connelly.
Harvard University Press/Belknap; 544 pages; $35 and £22.95

A vivid account of how the road to controlling population growth in the 20th century was paved with good intentions and unpleasant policies that did not work.

Gang Leader for a Day: A Rogue Sociologist Takes to the Streets.
By Sudhir Venkatesh.
Penguin Press; 320 pages; $25.95. Allen Lane; £18.99

A rich portrait of the urban poor, drawn not from statistics but from vivid tales of some of the 30,000 residents of Robert Taylor Homes, America's biggest public housing scheme, on Chicago's South Side.

Culture and digressions

Artists in Exile: How Refugees from Twentieth-Century War and Revolution Transformed the American Performing Arts.
By Joseph Horowitz.
HarperCollins; 480 pages; $27.50 and £27.50

A many-layered account, focusing on the interwar years, of the European immigrants, particularly those from Germany and Russia, who helped create American culture.

Salon to Biennial: Exhibitions that Made Art History: Volume I, 1863-1959.
Edited by Bruce Altshuler.
Phaidon; 410 pages; $90 and £45

The story of the medium through which most art lovers have experienced modern art: the big group show. A must for anyone interested in art, politics and taste in the 20th century.

The Secret Life of Words: How English Became English.
By Henry Hitchings.
Farrar, Straus and Giroux; 440 pages; $27. John Murray; £16.99

A globe-trotting survey of the world's lingua franca, which includes such nuggets as the word "chagrin", derived from the Turkish for roughened leather, or scaly sharkskin, and "lens", which comes from the Latin for "lentil", or "window" meaning "eye of wind" in old Norse.

How Fiction Works.
By James Wood.
Farrar, Straus and Giroux; 288 pages; $24. Jonathan Cape; £16.99

Illustration by Daniel Pudles

Displaying a playful exuberance wonderfully at odds with the dry, jargon-strewn tradition of academic criticism, this deft, slender volume analyses how novelists pull rabbits out of hats.

Delta Blues: The Life and Times of the Mississippi Masters Who Revolutionised American Music.
By Ted Gioia.
Norton; 448 pages; $27.95 and £16.99

A way of life as much as music, the passionate blues singing of Mississippi's steamy cotton fields ultimately gave rise to rock 'n' roll. Ted Gioia expertly traces its colourful history and heroes.

Cold Cream: My Early Life and Other Mistakes.
By Ferdinand Mount.
Bloomsbury; 384 pages; £15

A beautifully written, poignant and, at times, very funny memoir by a man who describes himself at different points in his life as idle, supercilious, incompetent and emotionally retarded.

Fiction and memoirs

Sea of Poppies: A Novel.
By Amitav Ghosh.
Farrar, Straus and Giroux; 528 pages; $26. John Murray; £18.99

Set in India in 1838, this rich and panoramic adventure tells the intricate stories of a cast of hundreds in lustrous and mesmerising prose. The first of a promised trilogy from a master of fiction.

Breath: A Novel.
By Tim Winton.
Farrar, Straus and Giroux; 224 pages; $23. Picador; £14.99

Two teenagers get caught up with a dangerous surfer, his wife and the waves in this Australian coming-of-age novel that perfectly balances youthful romanticism and disillusion.

Lush Life.
By Richard Price.
Farrar, Straus and Giroux; 464 pages; $26. Bloomsbury; £12.99

The wry bartenders, brusque cops and gritty rhythmic dialogue of Manhattan's Lower East Side turn this fast-paced murder-mystery into a whodunnit with literary heft.

The Secret Scripture.
By Sebastian Barry.
Viking; 304 pages; $24.95. Faber and Faber; £16.99

An elderly female inhabitant of a mental hospital and her psychiatrist tell their stories through their journals. A moving and memorable novel about conflicting versions of Ireland's past.

Fishing in Utopia: Sweden and the Future That Disappeared.
By Andrew Brown.
Granta Books; 352 pages; £16.99

Fishing, journalism and the death throes of the Swedish social system are the unpromising ingredients of this thought-provoking and evocative autobiographical memoir.

The Ayatollah Begs to Differ: The Paradox of Modern Iran.
By Hooman Majd.
Doubleday; 288 pages; $24.95

A Western-educated son of an ayatollah portrays the intricacies of Iranian society in this illuminating, critical and affectionate memoir of his homeland.

Palestinian Walks: Forays into a Vanishing Landscape.
By Raja Shehadeh.
Scribner; 200 pages; $15. Profile Books; £7.99

This superbly written and sad memoir tells the story of a lawyer's fight against Israel's seizure of Palestinian land and how he seeks solace by walking in the wild countryside of the West Bank.

The Three of Us: A Family Story.
By Julia Blackburn.
Pantheon; 313 pages; $26. Jonathan Cape; £16.99

A raw and moving story about a chaotic family and a lost childhood. Beautifully crafted and brave, this book is surprisingly full of forgiveness and humour.

Books by Economist writers in 2008

What we wrote

Dec 4th 2008
From The Economist print edition

When we weren't in the office

OUR policy is not to review books written by our staff or regular freelance contributors because readers might doubt the independence of such reviews. Some readers, however, have asked what books our journalists have produced. So here is a list of those published in 2008 by writers working for The Economist Group.

Philanthrocapitalism: How the Rich Can Save the World.
By Matthew Bishop and Michael Green.
Bloomsbury Press; 298 pages; $27. A&C Black; £16.99

Philanthrocapitalists, the new generation of super-rich who give away billions, use business strategies to effect social change and expect results to match. Our United States business editor and his co-author interview some of the world's most influential people and show why they are good at giving.

Rivals: How the Power Struggle Between China, India and Japan Will Shape Our Next Decade.
By Bill Emmott.
Harcourt; 352 pages; $26. Allen Lane; £20

The former editor-in-chief of *The Economist* analyses the growing rivalry between China, India and Japan and what their competition for influence, markets, resources and strategic advantage will mean for America, the global economy and the world.

The Unpossessed City.
By Jon Fasman.
Penguin Press; 339 pages; $25.95

A young American takes a job in Moscow and is soon enmeshed in a conspiracy to sell bio-weapons to the highest bidder. The second novel by an editor on Economist.com.

For the Sheer Hell of Living: Poems.
By Michael Glover.
San Marco Press; 94 pages; £9

Sad, wry and humorous poems assembled from fragments of seeing, thinking and reading. The first book-length collection of poetry in more than a decade from one of our arts and literature reviewers.

Bikila: Ethiopia's Barefoot Olympian.
By Tim Judah.
Reportage Press; 163 pages; $16.99 and £12.99

Abebe Bikila, an Ethiopian, became the first black African to win a gold medal at the Olympics, winning the 1960 marathon running barefoot. Our Balkans correspondent tells his story along with that of Bikila's Swedish trainer, the architect of the athlete's success.

Kosovo: What Everyone Needs to Know.
By Tim Judah.
Oxford University Press; 208 pages; $16.95 and £8.99

A straightforward guide to the history and geopolitics of Kosovo and the first book on the country since its declaration of independence in February this year. Another by our Balkans correspondent.

The New Cold War: Putin’s Russia and the Threat to the West.
By Edward Lucas.
Palgrave; 272 pages; $26.95. Bloomsbury; £18.99

Our central and eastern Europe correspondent plots the rise to power in Russia of the senior members of the former KGB, and lays bare their ideology and strategy. The book describes the regime’s repression, corruption and incompetence at home, and its aggression and subversion abroad.

Copyright Compliance: Practical Steps to Stay Within the Law.
By Paul Pedley.
Facet Publishing; 176 pages; $110 and £39.95

A guide to what constitutes an infringement of copyright, what happens when things go wrong and how to stay within the law. By the head of research at the Economist Intelligence Unit.

The Economist Book of Obituaries.
Edited by Keith Colquhoun and Ann Wroe.
Bloomberg Press; 409 pages; $29.95. Profile Books; £20

This selection of more than 200 obituaries published in *The Economist* since 1995 includes those of Arthur Miller, J.K. Galbraith, Estée Lauder, Harry Oppenheimer and Alex the African Grey, science's best-known parrot. Chosen by our obituaries editor and her predecessor.

Obituary

Jack Scott and Reg Varney

Dec 4th 2008
From The Economist print edition

Jack Scott and Reg Varney, two British icons of the 1970s, died on November 11th and 16th respectively, aged 85 and 92

BBC and Ronald Grant Archive

STOICISM is something the British are world-famous for. They carry on; they make do; they seldom complain, but form an orderly line to take whatever Fate may throw at them. At very bad moments—the Blitz, for example—they laugh and tell jokes against the enemy. Modern Britons are by and large a feebler and non-queuing race, as hedonistic, wasteful and complaining as anyone else; but the stereotype persists, and a moment of crisis is sure to bring it out again. For the British are subject to two utterly random forces that regularly test their stoicism and their patience: the weather and the buses.

The weather and the buses are known to be in league with each other. The worse the one, the fewer of the other, and the more dismal life in general. All the more so in the 1970s, when meteorology was a less exact science, bus-shelters ran no digitalised information, no one had mobile phones to explain what they were doing or where they were going or when they might be expected, and pre-Raphaelite hair, beards, flares, maxi-skirts and platform shoes turned any encounter with the elements (as any attempt to descend at speed from the upper deck) into serious drama, if not trauma.

The random ways of public transport were nowhere better celebrated than in “On the Buses”, a favourite 1970s TV sitcom starring Reg Varney as Stan Butcher, the short and cheeky driver of the Number 11 bus. The Number 11 served the mythical Essex town of Luxton, in fact Wood Green in North London. The green double-decker spent more hours in the garage than out of it, and Stan spent more time eating tea with his dysfunctional family or hanging out with his mate Jack, a randy conductor with an eye for the birds; but he often supped his stew still dressed in his bus-driver’s jacket with its shiny badge, a token of his devotion to his job. The modern Briton’s nostalgia for buses with rounded lines, conductors, platforms and hand-cranked ticket machines has much to do with him.

Mr Varney endowed Stan with all the lip and ebullience of his East End upbringing, and all the comic timing acquired from his years on the pub, club and variety circuit, which has now vanished. He kept to the end of his life the delighted glint-in-the-eye of a boy who has been paid eight shillings and sixpence for playing the accordion in Plumstead Working Men's Club, and can't believe his luck. Stan, it was fairly clear, was himself, and he could drive a bus to prove it.

But there were subtexts to "On the Buses". One was the war, still vivid in most adults' minds. Mr Varney played the perky Cockney survivor making life hell for the lugubrious Blakey, the bus-inspector, a Hitler lookalike who swore at the end of every episode to get even with him, and never did. Other roles came Mr Varney's way both before and after "On the Buses", and he gave them his talent and effort as he always did; but he never found another that so won the public's heart.

It had something to do not just with him, but with the whole British experience of suffering at the hands of Factors Beyond Our Control. The hours spent waiting, staring into the middle distance; the buses that would then either sail past full or turn up in a pack; the conductor and the driver cheerily oblivious (despite anguished pinging on the cord) of anyone's destination but their own. And all this against a backdrop, more often than not, of gently scything rain.

Scattered showers

The BBC's chief weatherman in these years, and the man in whom most Britons trusted as they left the house, was Jack Scott, a toothy, kindly, courteous man in unflattering NHS glasses. He was passionately involved with weather all his life. A County Durham boy, fresh out of college at 17, he had gone straight to the Meteorological Office; during the war he had manned weather stations, both balmy and bracing, in Malta, North Africa and Shetland. His whole career revolved around talking about the weather on television, until he gave it up in favour of enduring the elements on the golf course.

Mr Scott was a new sort of weatherman, as cheerily populist as Stan, but more informative. He also did his level best to make the weather forecast gripping. In 1975 he introduced, in place of the runic circles, figures and barographs on synoptic maps, magnetic picture-symbols about the size of his hand. The clouds that rained down on bus-awaiting Britons were now a cuddly fistful, letting loose a few drops; the storms that pelted and shocked them were now a jagged yellow lightning flash, almost as exciting on everyone's black-and-white screens; and the sun hid modestly behind the ever-present cumulus, a few sparse rays showing, with an occasional full-frontal blaze over Torquay.

The symbols did not always stay on the map. Though pressed confidently over one benighted place, they might slide slowly down, or fall off, all of which Mr Scott took in his smiling stride. Nor did they necessarily signify the weather that would actually arrive. But Britons knew this was par for the course. Fortified with the last vestiges of wartime stoicism, they would wait patiently under their umbrellas for the tall green shape of the Number 11 bus: the one that ran along the High Street and ended at the cemetery gates.

Overview

Dec 4th 2008
From The Economist print edition

Global manufacturing is shrinking fast. In America, the Institute for Supply Management's index plunged from 38.9 to 36.2, the lowest level since 1982 (a reading below 50 indicates activity is falling). The weakness was mirrored by comparable surveys of purchasing managers in other rich countries. The manufacturing index in the euro area fell to 35.6, a low for the 11-year survey; Britain's dropped to 34.4, also a record low, while the index in Japan fell to 36.7.

America's recession became official. The panel of economists that dates American business cycles declared that the downturn started in December 2007.

Australia's central bank cut its policy interest rate by a percentage point, to 4.25%, on December 2nd. **New Zealand's** central bank cut rates by one and a half points, to 5%, on December 4th. **Thai** rates were reduced by a percentage point, to 2.75%.

Consumer price inflation in the **euro area** fell from 3.2% to 2.1% in November, according to a provisional estimate. The unemployment rate edged up to 7.7% in October. The jobless rate rose in France and Spain, but was stable in Germany. Retail sales fell by 0.8% in October; they were 2.1% lower than a year earlier. Sales in Germany fell by 1.6% in the month; in Spain they dropped by 2.3%.

In Britain only 32,000 mortgages were approved for house purchase in October, said the Bank of England. The number matched August's record low and was almost two-thirds below the level of a year earlier.

Output, prices and jobs

Dec 4th 2008
From The Economist print edition

Output, prices and jobs

% change on year ago

	Gross domestic product				Industrial production	Consumer prices			Unemployment
	latest	qtr*	2008†	2009†	latest	latest	year ago	2008†	rate‡, %
United States	+0.7 Q3	–0.5	+1.3	–1.0	–4.1 Oct	+3.7 Oct	+3.5	+4.1	6.5 Oct
Japan	–0.1 Q3	–0.4	+0.3	–0.9	–7.1 Oct	+1.7 Oct	+0.3	+1.6	3.7 Oct
China	+9.0 Q3	na	+9.6	+7.5	+8.2 Oct	+4.0 Oct	+6.5	+6.2	9.2 2007
Britain	+0.3 Q3	–2.0	+0.8	–1.4	–2.2 Sep	+4.5 Oct§	+2.1	+3.7	5.8 Sep††
Canada	+0.5 Q3	+1.3	+0.6	+0.1	–3.7 Sep	+2.6 Oct	+2.4	+2.7	6.2 Oct
Euro area	+0.7 Q3	–0.8	+0.9	–0.9	–2.4 Sep	+2.1 Nov	+3.1	+3.2	7.7 Oct
Austria	+1.5 Q3	+0.4	+1.6	–0.4	–0.5 Sep	+3.1 Oct	+2.8	+3.2	3.2 Sep
Belgium	+1.3 Q3	+0.4	+1.3	–0.4	+3.3 Sep	+3.1 Nov	+2.9	+4.5	10.9 Sep‡‡
France	+0.6 Q3	+0.6	+0.9	–0.7	–1.9 Sep	+2.7 Oct	+2.0	+3.0	8.2 Oct
Germany	+0.8 Q3	–2.1	+1.4	–1.0	–2.3 Sep	+1.4 Nov	+3.2	+2.6	7.5 Nov
Greece	+3.1 Q3	+2.0	+2.6	+1.4	–3.3 Sep	+3.9 Oct	+3.1	+4.4	7.1 Aug
Italy	–0.9 Q3	–2.0	–0.3	–1.1	–5.7 Sep	+2.7 Nov	+2.4	+3.4	6.8 Q2
Netherlands	+1.8 Q3	+0.1	+2.0	–0.4	–1.6 Sep	+2.3 Nov	+1.9	+2.5	3.8 Oct††
Spain	+0.9 Q3	–0.9	+1.3	–1.1	–4.5 Sep	+3.6 Oct	+3.6	+4.4	12.8 Oct
Czech Republic	+4.7 Q3	+6.1	+4.2	+3.0	+3.4 Sep	+6.0 Oct	+4.0	+6.6	5.2 Oct
Denmark	–1.2 Q3	–1.9	nil	–0.7	–5.1 Oct	+3.7 Oct	+1.7	+3.5	1.7 Oct
Hungary	+0.8 Q3	–0.4	+2.0	+3.0	–0.7 Sep	+5.1 Oct	+6.7	+6.7	7.7 Oct††
Norway	+0.6 Q3	–2.8	+2.5	+1.5	–4.2 Sep	+5.5 Oct	–0.2	+3.6	2.5 Sep***
Poland	+4.8 Q3	na	+5.1	+2.9	+0.2 Oct	+4.2 Oct	+3.0	+4.3	8.8 Oct‡‡
Russia	+7.8 Q2	na	+7.0	+3.7	+0.6 Oct	+14.2 Oct	+10.8	+14.1	6.1 Oct‡‡
Sweden	nil Q3	–0.4	+1.0	–0.1	–4.9 Sep	+4.0 Oct	+2.7	+3.7	5.7 Oct‡‡
Switzerland	+1.7 Q3	+0.1	+1.8	–0.2	+6.1 Q2	+1.5 Nov	+1.8	+2.5	2.6 Oct
Turkey	+1.9 Q2	na	+2.5	+1.5	–5.5 Sep	+12.0 Oct	+7.0	+10.6	9.0 Q3‡‡
Australia	+1.9 Q3	+0.3	+2.4	+1.1	+2.8 Q2	+5.0 Q3	+1.9	+4.4	4.3 Oct
Hong Kong	+1.7 Q3	–2.0	+3.8	+0.5	–4.2 Q2	+1.8 Oct	+3.2	+4.5	3.5 Oct††
India	+7.6 Q3	na	+6.2	+6.1	+4.8 Sep	+10.4 Oct	+5.5	+8.3	7.2 2007
Indonesia	+6.1 Q3	na	+6.1	+3.5	–0.9 Sep	+11.7 Nov	+5.6	+10.5	8.5 Feb
Malaysia	+4.7 Q3	na	+5.6	+3.2	–1.7 Sep	+7.6 Oct	+1.9	+5.8	3.5 Q2
Pakistan	+5.8 2008**	na	+6.0	+2.9	–5.6 Aug	+25.0 Oct	+9.3	+20.8	5.6 2007
Singapore	–0.6 Q3	–6.8	+2.0	–0.1	–12.6 Oct	+6.4 Oct	+3.6	+6.6	2.2 Q3
South Korea	+3.8 Q3	+2.1	+4.5	+1.6	–2.4 Oct	+4.5 Nov	+3.5	+5.0	3.1 Oct
Taiwan	–1.0 Q3	na	+4.0	+1.5	–12.5 Oct	+2.4 Oct	+5.3	+3.8	4.3 Oct
Thailand	+4.0 Q3	+2.3	+4.5	+3.1	+2.0 Oct	+2.2 Nov	+3.0	+5.8	1.2 Aug
Argentina	+7.8 Q2	+8.7	+6.2	+2.2	–1.5 Oct	+8.4 Oct	+8.4	+9.0	7.8 Q3‡‡
Brazil	+6.1 Q2	+6.6	+5.3	+2.4	+0.8 Oct	+6.4 Oct	+4.1	+5.8	7.5 Oct‡‡
Chile	+4.8 Q3	–0.2	+3.9	+2.8	–0.8 Oct	+9.9 Oct	+6.5	+8.8	7.5 Oct††‡‡
Colombia	+3.7 Q2	+2.8	+3.2	+2.0	–3.3 Sep	+7.7 Nov	+5.4	+7.1	11.1 Sep‡‡
Mexico	+1.6 Q3	+2.6	+1.9	+0.9	–1.9 Sep	+5.8 Oct	+3.7	+5.3	4.1 Oct‡‡
Venezuela	+4.6 Q3	na	+3.5	–3.0	–6.8 Aug	+35.6 Oct	+17.2	+31.2	7.2 Q3‡‡
Egypt	+6.8 Q2	na	+7.2	+4.9	+6.8 Q2	+20.3 Nov	+6.9	+18.2	8.4 Q2‡‡
Israel	+5.1 Q3	+2.3	+4.1	+2.5	+3.0 Sep	+5.5 Oct	+2.2	+4.7	5.9 Q3
Saudi Arabia	+3.5 2007	na	+6.1	+3.2	na	+10.4 Sep	+4.9	+8.5	na
South Africa	+2.9 Q3	+0.2	+3.5	+2.5	+4.9 Sep	+12.1 Oct	+7.9	+11.3	23.2 Sep‡‡
MORE COUNTRIES Data for the countries below are not provided in printed editions of *The Economist*									
Estonia	–3.3 Q3	na	–2.0	–2.5	–11.0 Oct	+9.8 Oct	+8.5	+10.5	4.2 Sep
Finland	+2.4 Q2	+3.1	+2.6	+1.1	+0.8 Oct	+4.4 Oct	+2.6	+4.2	6.0 Oct
Iceland	+5.0 Q2	+20.9	+0.5	–8.1	+0.4 2007	+17.1 Nov	+5.2	+13.4	1.9 Oct‡‡
Ireland	–0.8 Q2	–2.1	–2.5	–2.3	+4.0 Sep	+4.0 Oct	+4.8	+4.2	7.8 Nov
Latvia	–4.2 Q3	na	–0.4	–0.5	–5.4 Sep	+13.8 Oct	+13.2	+15.8	6.8 Sep
Lithuania	+3.1 Q3	+1.6	+4.4	+1.6	na	+10.5 Oct	+7.5	+11.0	4.6 Oct‡‡
Luxembourg	+2.8 Q2	+4.5	+2.5	+1.5	–0.7 Sep	+3.3 Oct	+2.9	+4.0	4.5 Oct‡‡
New Zealand	–0.3 Q2	–2.1	+0.3	+1.1	+2.4 Q2	+5.1 Q3	+1.8	+4.3	4.2 Q3
Peru	+9.9 Sep	na	+9.1	+5.5	+9.0 Sep	+6.7 Nov	+3.5	+5.7	7.3 Oct††
Philippines	+4.6 Q3	+3.4	+4.2	+1.8	+6.5 Aug	+11.2 Oct	+2.7	+9.6	7.4 Q3‡‡
Portugal	+0.7 Q3	nil	+0.4	–0.8	–4.3 Sep	+2.3 Oct	+2.6	+2.9	7.7 Q3‡‡
Slovakia	+7.0 Q3	na	+6.8	+4.5	+5.5 Sep	+5.1 Oct	+3.2	+4.7	7.5 Oct††
Slovenia	+5.5 Q2	na	+4.2	+2.8	+5.6 Sep	+3.1 Nov	+5.7	+6.0	6.3 Sep‡‡

*% change on previous quarter, annual rate. †*The Economist* poll or Economist Intelligence Unit estimate/forecast. ‡National definitions.- §RPI inflation rate 4.2% in Oct. **Year ending June. ††Latest three months. ‡‡Not seasonally adjusted. ***Centred 3-month average

Sources: National statistics offices and central banks; Thomson Datastream; Reuters; Centre for Monitoring Indian Economy; OECD; ECB

The Economist commodity-price index

Dec 4th 2008
From The Economist print edition

The Economist commodity-price index
2000=100

	Nov 25th	Dec 2nd*	% change on one month	% change on one year
Dollar index				
All items	157.3	151.7	−7.9	−28.3
Food	175.2	169.6	−2.9	−17.6
Industrials				
All	134.1	128.5	−15.4	−41.3
Nfa†	117.5	112.4	−13.1	−34.5
Metals	143.2	137.3	−16.4	−43.9
Sterling index				
All items	156.0	154.0	−3.9	−1.1
Euro index				
All items	112.0	110.3	−9.6	−16.8
Gold				
$ per oz	810.50	779.30	+5.6	−2.5
West Texas Intermediate				
$ per barrel	50.93	47.64	−24.6	−46.1

*Provisional †Non-food agriculturals.

The Economist poll of forecasters, December averages

Dec 4th 2008
From The Economist print edition

The Economist **poll of forecasters, December averages** (previous month's, if changed)

	Real GDP, % change				Consumer prices % increase		Current account % of GDP	
	Low/high range		average					
	2008	2009	2008	2009	2008	2009	2008	2009
Australia	1.8/3.4	-0.5/2.8	2.4 (2.6)	1.1 (1.9)	4.4	2.8 (3.2)	-5.5 (-5.4)	-5.5 (-5.2)
Belgium	1.1/1.5	-1.1/0.1	1.3 (1.4)	-0.4 (0.3)	4.5 (4.6)	2.1 (2.3)	0.7 (1.6)	0.6 (1.6)
Britain	0.6/0.9	-2.1/-0.3	0.8 (0.9)	-1.4 (-1.0)	3.7 (3.8)	1.7 (2.4)	-3.0	-2.8
Canada	nil/1.0	-0.8/1.2	0.6	0.1 (0.5)	2.7 (2.8)	1.8 (2.2)	1.0 (0.9)	-0.1 (-0.5)
France	0.7/1.0	-1.2/-0.1	0.9	-0.7 nil	3.0 (3.2)	1.4 (1.7)	-1.7	-1.7 (-1.9)
Germany	1.1/1.7	-1.8/0.5	1.4	-1.0 (-0.2)	2.6 (2.8)	1.3 (1.7)	6.6 (6.7)	6.0 (5.9)
Italy	-0.5/-0.1	-1.9/-0.5	-0.3 (-0.1)	-1.1 (-0.4)	3.4 (3.5)	1.9 (2.2)	-3.0 (-2.9)	-2.8 (-2.7)
Japan	0.1/0.5	-2.5/-0.1	0.3 (0.5)	-0.9 (-0.1)	1.6 (1.7)	0.3 (0.7)	3.8 (4.0)	3.8 (4.1)
Netherlands	1.8/2.2	-0.9/-0.2	2.0 (2.1)	-0.4 (0.5)	2.5	1.7 (2.1)	6.3 (6.7)	5.7 (5.8)
Spain	1.1/1.8	-2.0/1.2	1.3	-1.1 (-0.5)	4.4 (4.5)	2.3 (2.7)	-10.0	-8.7 (-8.8)
Sweden	0.5/2.2	-1.3/2.2	1.0 (1.1)	-0.1 (0.5)	3.7	1.9 (2.2)	7.6 (7.7)	7.4 (7.5)
Switzerland	1.0/2.2	-1.2/1.2	1.8 (1.9)	-0.2 (0.4)	2.5 (2.6)	1.1 (1.4)	9.8 (12.0)	10.3 (11.9)
United States	1.1/1.5	-1.8/0.2	1.3 (1.4)	-1.0 (-0.2)	4.1 (4.3)	0.7 (1.8)	-4.5 (-4.6)	-3.1 (-3.3)
Euro area	0.8/1.0	-1.6/-0.3	0.9 (1.1)	-0.9 (-0.1)	3.2 (3.3)	1.5 (2.0)	-0.4	-0.3 (-0.2)

Sources: ABN AMRO, BNP Paribas, Citigroup, Decision Economics, Deutsche Bank, Economist Intelligence Unit, Goldman Sachs, HSBC Securities, KBC Bank, JPMorgan Chase, Morgan Stanley, Scotiabank, UBS

Trade, exchange rates, budget balances and interest rates

Dec 4th 2008
From The Economist print edition

Trade, exchange rates, budget balances and interest rates

	Trade balance* latest 12 months, $bn	Current-account balance latest 12 months, $bn	Current-account balance % of GDP 2008†	Currency units, per $ Dec 3rd	Currency units, per $ year ago	Budget balance % of GDP 2008†	Interest rates, % 3-month latest	Interest rates, % 10-year gov't bonds, latest
United States	−851.1 Sep	−699.0 Q2	−4.5	–	–	−3.2	1.22	2.67
Japan	+64.8 Sep	+185.9 Sep	+3.8	93.3	111	−3.0	0.80	1.37
China	+265.2 Oct	+371.8 2007	+10.5	6.88	7.39	0.2	2.67	3.06
Britain	−185.5 Sep	−82.9 Q2	−3.0	0.67	0.49	−4.9	3.88	3.65
Canada	+52.6 Sep	+19.2 Q3	+1.0	1.26	1.01	0.2	1.56	3.40
Euro area	−40.4 Sep	−51.4 Sep	−0.4	0.79	0.68	−1.4	3.74	3.00
Austria	−0.3 Aug	+14.5 Q2	+3.0	0.79	0.68	−1.0	3.74	3.69
Belgium	+10.2 Aug	−9.8 Jun	+0.7	0.79	0.68	−0.8	3.80	4.27
France	−80.7 Sep	−53.6 Sep	−1.7	0.79	0.68	−3.0	3.74	3.48
Germany	+288.4 Sep	+266.8 Sep	+6.6	0.79	0.68	0.9	3.74	3.02
Greece	−67.7 Sep	−52.5 Sep	−10.3	0.79	0.68	−3.2	3.74	4.65
Italy	−17.0 Sep	−70.8 Sep	−3.0	0.79	0.68	−2.6	3.74	4.20
Netherlands	+60.0 Sep	+62.5 Q2	+6.3	0.79	0.68	1.1	3.74	3.51
Spain	−153.9 Sep	−165.8 Sep	−10.0	0.79	0.68	−2.5	3.74	3.74
Czech Republic	+6.3 Sep	−5.0 Sep	−2.9	20.2	17.9	−1.9	4.07	4.29
Denmark	+6.5 Sep	+6.5 Sep	+1.1	5.87	5.09	3.9	6.75	3.49
Hungary	+0.4 Sep	−8.8 Q2	−5.5	205	172	−3.8	11.07	9.30
Norway	+83.8 Oct	+86.5 Q3	+17.3	7.07	5.49	17.8	5.52	3.72
Poland	−22.0 Sep	−27.3 Sep	−5.6	3.03	2.45	−1.8	6.55	5.93
Russia	+195.9 Sep	+116.5 Q3	+6.0	27.9	24.5	5.8	13.00	9.07
Sweden	+18.6 Oct	+40.5 Q3	+7.6	8.21	6.41	2.4	2.60	2.58
Switzerland	+17.7 Oct	+60.2 Q2	+9.8	1.21	1.13	1.1	1.21	2.07
Turkey	−75.2 Oct	−47.1 Sep	−6.4	1.56	1.18	−1.6	20.23	9.59‡
Australia	−9.0 Oct	−56.7 Q3	−5.5	1.54	1.15	0.3	4.53	4.34
Hong Kong	−27.2 Oct	+27.5 Q2	+10.3	7.75	7.80	−1.0	2.00	1.64
India	−109.6 Oct	−21.9 Q2	−3.6	50.0	39.5	−4.3	7.12	7.34
Indonesia	+13.5 Oct	+6.3 Q2	+0.4	11,950	9,265	−1.4	12.36	12.56‡
Malaysia	+42.0 Oct	+35.3 Q2	+12.8	3.64	3.34	−5.0	3.40	5.51‡
Pakistan	−22.4 Oct	−14.0 Q2	−6.2	78.6	61.3	−6.7	15.48	25.34‡
Singapore	+20.6 Oct	+29.2 Q3	+17.4	1.53	1.45	0.8	0.75	2.16
South Korea	−14.2 Nov	−8.3 Oct	−2.3	1,470	924	1.0	5.43	5.35
Taiwan	+6.5 Oct	+28.8 Q3	+5.8	33.5	32.3	−1.7	2.40	1.59
Thailand	+1.3 Oct	+2.6 Oct	−0.4	35.6	33.8	−1.9	3.85	3.28
Argentina	+14.2 Oct	+6.0 Q2	+2.7	3.41	3.13	0.7	18.88	na
Brazil	+26.1 Nov	−26.6 Oct	−1.8	2.38	1.80	−1.5	13.66	6.16‡
Chile	+14.4 Oct	−1.6 Q3	−1.0	675	501	7.0	8.28	3.89‡
Colombia	+2.3 Aug	−4.9 Q2	−2.4	2,314	2,037	−1.0	10.27	8.25‡
Mexico	−12.5 Oct	−11.8 Q3	−0.8	13.6	10.9	nil	8.75	8.87
Venezuela	+50.2 Q3	+49.4 Q3	+14.7	5.00	5.50§	−1.1	17.28	6.55‡
Egypt	−23.4 Q2	+0.9 Q2	+3.0	5.53	5.53	−6.5	11.70	6.22‡
Israel	−14.1 Oct	+3.5 Q2	+0.9	4.00	3.86	−0.8	2.65	4.43
Saudi Arabia	+150.8 2007	+95.0 2007	+29.1	3.75	3.74	11.6	3.45	na
South Africa	−9.5 Oct	−22.5 Q2	−6.0	10.1	6.79	0.3	12.10	8.16
MORE COUNTRIES Data for the countries below are not provided in printed editions of *The Economist*								
Estonia	−4.2 Sep	−3.3 Sep	−11.9	12.3	10.7	−1.0	7.07	na
Finland	+11.4 Sep	+10.0 Sep	+3.8	0.79	0.68	4.5	3.77	3.62
Iceland	−0.6 Oct	−4.5 Q2	−11.4	148	61.8	0.3	18.44	na
Ireland	+39.9 Sep	−15.8 Q2	−2.6	0.79	0.68	−6.5	3.74	3.99
Latvia	−6.4 Sep	−5.3 Sep	−15.0	0.56	0.48	−1.5	11.13	na
Lithuania	−7.9 Sep	−6.7 Sep	−13.9	2.72	2.36	−0.9	8.96	na
Luxembourg	−7.5 Sep	+5.1 Q2	na	0.79	0.68	0.3	3.74	na
New Zealand	−3.7 Oct	−11.4 Q2	−7.1	1.87	1.31	0.3	5.85	4.83
Peru	+5.5 Sep	−3.0 Q3	−2.8	3.12	2.99	2.7	6.50	na
Philippines	−8.6 Sep	+4.3 Jun	+1.8	49.2	42.0	−0.9	5.06	na
Portugal	−33.6 Aug	−28.7 Sep	−9.7	0.79	0.68	−2.4	3.74	3.79
Slovakia	−0.8 Sep	−6.1 Jul	−5.6	23.8	22.7	−2.2	1.82	4.04
Slovenia	−4.6 Sep	−3.4 Sep	−6.6	0.79	0.68	0.4	3.74	na

*Merchandise trade only. †*The Economist* poll or Economist Intelligence Unit forecast. ‡Dollar-denominated bonds. §Unofficial exchange rate.
Sources: National statistics offices and central banks; Thomson Datastream; Reuters; JPMorgan; Bank Leumi le-Israel; Centre for Monitoring Indian Economy; Danske Bank; Hong Kong Monetary Authority; Standard Bank Group; UBS; Westpac.

Markets

Dec 4th 2008
From The Economist print edition

Markets

	Index	% change on		
			Dec 31st 2007	
	Dec 3rd	one week	in local currency	in $ terms
United States (DJIA)	8,591.7	-1.5	-35.2	-35.2
United States (S&P 500)	870.7	-1.9	-40.7	-40.7
United States (NAScomp)	1,492.4	-2.6	-43.7	-43.7
Japan (Nikkei 225)	8,004.1	-2.5	-47.7	-37.4
Japan (Topix)	799.2	-2.2	-45.8	-35.2
China (SSEA)	2,063.9	+3.5	-62.6	-60.3
China (SSEB, $ terms)	116.4	+9.2	-70.0	-68.2
Britain (FTSE 100)	4,170.0	+0.4	-35.4	-51.9
Canada (S&P TSX)	8,297.0	-4.0	-40.0	-52.9
Euro area (FTSE Euro 100)	719.9	-0.1	-47.6	-54.6
Euro area (DJ STOXX 50)	2,369.5	-0.2	-46.1	-53.3
Austria (ATX)	1,709.8	-2.6	-62.1	-67.1
Belgium (Bel 20)	1,848.0	+2.1	-55.2	-61.1
France (CAC 40)	3,166.7	-0.1	-43.6	-51.0
Germany (DAX)*	4,567.2	+0.1	-43.4	-50.9
Greece (Athex Comp)	1,834.3	-2.1	-64.6	-69.3
Italy (S&P/MIB)	19,129.0	-3.9	-50.4	-56.9
Netherlands (AEX)	242.0	-1.3	-53.1	-59.3
Spain (Madrid SE)	947.8	+2.5	-42.3	-49.9
Czech Republic (PX)	818.9	+0.2	-54.9	-59.5
Denmark (OMXCB)	235.4	+2.2	-47.6	-54.4
Hungary (BUX)	12,544.1	+5.2	-52.2	-59.7
Norway (OSEAX)	254.9	-1.9	-55.3	-65.7
Poland (WIG)	26,635.7	-2.2	-52.1	-61.1
Russia (RTS, $ terms)	603.3	-8.4	-70.0	-73.7
Sweden (Aff.Gen)	190.8	+1.7	-43.9	-55.9
Switzerland (SMI)	5,604.2	+1.9	-33.9	-38.3
Turkey (ISE)	23,936.7	-1.9	-56.9	-67.7
Australia (All Ord.)	3,476.5	-0.1	-45.9	-59.8
Hong Kong (Hang Seng)	13,588.7	+1.6	-51.1	-50.9
India (BSE)	8,747.4	-3.1	-56.9	-66.0
Indonesia (JSX)	1,192.5	-0.1	-56.6	-65.9
Malaysia (KLSE)	847.5	-1.0	-41.3	-46.7
Pakistan (KSE)	9,187.1	nil	-34.7	-48.9
Singapore (STI)	1,640.6	-4.1	-52.7	-55.4
South Korea (KOSPI)	1,022.7	-0.7	-46.1	-65.7
Taiwan (TWI)	4,307.3	+0.8	-49.4	-51.0
Thailand (SET)	392.9	-0.6	-54.2	-56.7
Argentina (MERV)	968.5	+1.4	-55.0	-58.4
Brazil (BVSP)	35,296.0	-3.2	-44.8	-58.6
Chile (IGPA)	11,111.4	-3.7	-21.1	-41.8
Colombia (IGBC)	7,381.1	+2.1	-31.0	-39.8
Mexico (IPC)	20,147.0	+0.6	-31.8	-45.1
Venezuela (IBC)	34,530.3	-0.1	-8.9	-60.9
Egypt (Case 30)	3,979.7	nil	-62.0	-62.1
Israel (TA-100)	564.3	-0.2	-51.1	-52.9
Saudi Arabia (Tadawul)	4,654.9	+5.2	-57.8	-57.8
South Africa (JSE AS)	19,113.3	-6.6	-34.0	-55.5
Europe (FTSEurofirst 300)	829.9	-0.1	-44.9	-52.2
World, dev'd (MSCI)	860.2	-1.9	-45.9	-45.9
Emerging markets (MSCI)	503.4	-1.9	-59.6	-59.6
World, all (MSCI)	211.8	-1.9	-47.5	-47.5
World bonds (Citigroup)	767.7	+0.9	+5.1	+5.1
EMBI+ (JPMorgan)	360.8	+0.4	-16.8	-16.8
Hedge funds (HFRX)	1,029.6	-0.8	-22.6	-22.6
Volatility, US (VIX)	60.7	54.9	22.5 (levels)	
CDSs, Eur (iTRAXX)†	193.3	+18.1	+281.8	+231.4
CDSs, N Am (CDX)†	278.3	+8.9	+257.3	+257.3
Carbon trading (EU ETS) €	15.8	-2.5	-28.9	-38.3

*Total return index. †Credit-default swap spreads, basis points.
Sources: National statistics offices, central banks and stock exchanges; Thomson Datastream; Reuters; WM/Reuters; JPMorgan Chase; Bank Leumi le-Israel; CBOE; CMIE; Danske Bank; EEX; HKMA; Markit; Standard Bank Group; UBS; Westpac.

Foreign direct investment

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The OECD expects the global economic crisis to weigh down foreign direct investment (FDI) in the second half of 2008. The inter-governmental think-tank forecasts that FDI inflows into its member countries will drop by 13% in the year as a whole and that outflows will fall by 6%. In the first half of the year inflows totalled $599 billion and outflows $857 billion. America was the largest source as well as the main recipient. France ranked second in outflows and Britain in inflows. The one component of FDI expected to buck the downward trend is the purchase of companies in OECD countries by buyers from outside the club. The pattern of the year so far suggests the value of such deals is set to be 25% greater than in 2007.